EDITORIAL

DOMESTIC ENGINEERING

Whole No. 1507 CHICAGO, OCTOBER 29, 1921 Vol. 97, No. 5

DISPLAY BOILER AND RADIATOR HEATING EQUIPMENT.

THE money spent for window displays by department stores and other great commercial establishments with goods to sell is enormous. Their buildings are planned in the first place so as to permit of a great amount of window space, the finest of goods are shown in them, and the best of ability is secured to arrange them in the most appealing manner. There is hardly a business today with goods to sell to consumers that does not maintain attractive displays of those goods. The reason for this is the fact that keen business men realize that they must sell their goods through the eyes of their customers, as the greatest arguments for any article are gained or confirmed by its appearance to the eye. Knowledge of and desire for any article in the first place is usually gained through sight.

Within the past few years a great many plumbing contractors have been made to realize the value of attractive displays of plumbing goods and some allied wares, but for some reason or other few seem to realize that what applies to plumbing fixtures, applies equally as well to heating equipment. Some claim that it is impossible to make attractive displays of heating equipment such as boilers, radiators, etc. They said the same thing about plumbing fixtures some years ago. The progressive men of the trade, however, have shown a great many of them the fallacy of this statement until today there are few cities where there is not at least one plumbing shop with a display of plumbing goods that compares most favorably with the finest displays maintained by any other line of business.

There are no sound reasons why boilers, radiators, etc., should not or could not be attractively displayed. In fact, this has been done. One of the large manufacturers of boilers and radiators had a window display in an eastern city some time ago that was considered one of the three greatest in the United States of any line of goods.

Where there is plenty of window space it might be divided into two sections, one of them so arranged as to look like the basement or boiler room with the sides and background representing the basement walls. Actual temporary walls might even be built where conditions permit. In this room should be the boiler and possibly a little pile of coal. Attractive cards might be placed in this room in a conspicuous place, giving information concerning the boiler, the number of radiators it will heat, just how to get the most out of the fuel used, an explanation of the operation of some of the modern specialties used in boiler and radiator heating systems and their value in maintaining uniform temperatures, etc.

The second division of the window might show a cosy living room or some other room of the house in which a radiator stands out. Or it might be shown how artistically the radiator may be covered or concealed. In this room might also be placed attractive cards giving detailed information about radiator heat, its healthfulness and uniformity, the importance of sufficient radiation, the amount of radiation necessary in various size rooms, the increased value of property thus heated, and present prices as compared with those of a year or two ago. The cards in both windows could be changed regularly, perhaps in connection with some newspaper advertising program in the local newspapers, theatre screens, etc.

Window displays have sold goods for other merchants, they have sold goods for the plumber. The replacing of obsolete plumbing fixtures with the more sanitary and more attractive modern ones, and in general the vast amount of plumbing goods that have been used in the remodeling of old homes alone during the past few years is traceable largely to advertising and the displays in the windows and showrooms of progressive plumbers.

Well arranged window displays of heating goods will not only help to convince the man who is now building a home that he should install boiler and radiator heat in preference to any other kind, and also fix firmly in the minds of possible future builders the desirability of this form of heat, but it will do much to convince those now using some other form that they should replace it with a modern boiler and radiator heating system. Furthermore, it will help the master steam fitter to become more of a merchant, for it will help him to sell heating specialties, such as regulators, humidifiers, radiator covers for protecting the walls, and contrivances for concealing the radiators for those who desire to do so, and in various ways help him increase sales. Your windows and your prospects' eyes should be your best salesmen. Why not let them increase your heating business?

A Successful Plumbing *and* Heating Business Developed *in the* Suburbs

Progressive Contractor Builds Prosperous Business Through Establishing Reputation for Dependability and Fairness

By The Field Man

THE writer walked into the office of the jobbing house of Haines, Jones & Cadbury Co. of Philadelphia, and asked for some of the live wires in the plumbing and heating business around that city. Among those mentioned was Yern Jorgenson whose shop is located in Bala, one of the suburbs.

As I got off the street car at the end of the car line and started to walk the remaining five blocks to Mr. Jorgenson's shop, an old negro, typically southern, came up driving an old one-horse shay, and invited me to ride. As I climbed up onto the seat, the pleasant old negro confided that his master, whom he had just driven to the railroad station, has several beautiful cars, but preferred to ride behind a horse. As the horse cantered briskly along, I noticed that the broad well paved drive was lined on both sides by beautiful modern mansions with hedge fenced lawns and gardens that were most inviting.

This seemed too much like a typical old fashioned community of southern aristocracy to be the place to look for a live wire, but a few minutes' talk with Mr. Jorgenson convinced me that I had not been misdirected. When I informed that gentleman that I had been told he was an active man in the trade, he replied:

Type of Homes in Which Yern Jorgenson Has Built Up His Plumbing Business.

"I didn't think I was considered as much of a live wire now as I used to be. At one time I had about forty men working and did a considerably larger business than I do now, for I have only ten working at the present time. While I had the big crew I almost worked myself to death keeping the men busy and looking after the different jobs, but at the end of a year I would find that I wasn't a great deal ahead of where I started financially, and that personally I was pretty well worn down. It had been a case of meeting prices where competition was very keen, and the consequence was that there was little profit in it. I finally decided to cut down my force and try to develop a reputation for doing a high grade of work for a class of people who could and would pay more for that kind of a job. It was the wisest move I ever made, for with ten or twelve men now I make considerably more than I did before with forty, and don't have to worry myself sick about keeping the men busy or as to whether or not I will make anything on a job. Although I do considerable new work, I would rather do remodeling and repairing for the trade I have developed around this part of the city and country. There is little use in going after a job that has a lot of others bidding on it, for the chances are that the man who gets it is going to be much lower than he ought to be, and consequently will make little or nothing out of it.

"There is a little money in selling labor, particularly on a competitive basis. For this reason I have made an effort to do more merchandising. Gas heaters and ranges are the things I have pushed the most strenuously, but I find it pretty hard work, for if the gas company gets a tip to the effect that I have developed a prospect, they get right on the job and offer to make the installation free of charge in order to get the sale. I never could figure out just why they do this, but I guess it is just their way of doing business. I still sell quite a few, but am swinging around to other things along with the gas appliance business. Last year during the fall, winter and spring I made quite a sales drive on a patented device for saving coal and sold quite a few. However, it was not entirely to sell the device itself so much as it was to have something to start talking about, for I have a man who goes out canvassing whenever I can possibly spare him from the regular work.

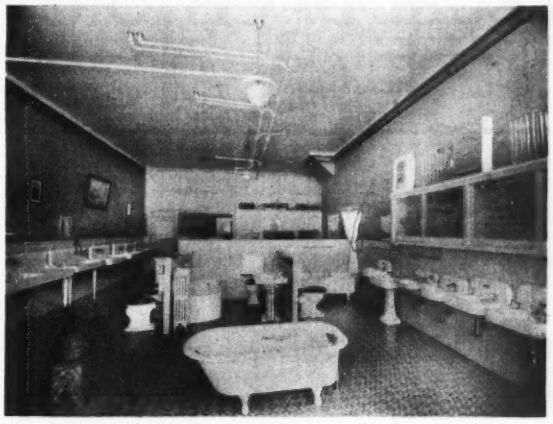
"I hired Marshall Hickman primarily to develop the merchandising end and supervise the work of the office, but this summer I have had a lot of work that simply had to be done as soon as possible and therefore, I have not been able to spare Mr. Hickman for the canvassing work for sometime. He is a very good business getter not only in making definite sales, but also in developing relationships with prominent people whose work we eventually get. That is, he calls on a great many people who probably never knew we were in business or just what we had to offer. We get a good deal of high class work which we can trace directly to his calls. We put out from fifteen hundred to two thousand calendars a year, and these he delivers in person. It gives him an opportunity to talk and to remind the party that we are still in business and have certain special things to offer. Of course, a great many of the people to whom calendars are delivered are not our customers, at least not as far as the

heating and plumbing department is concerned. They may have bought a carburetor, a gas range, a gas heater, had some roofing done, or had some other little dealings with us, or they may not have ever dealt with us before. Quite frequently when he calls on a person for whom we have never done any plumbing or heating work, he suggests that if they ever have an emergency call for a plumber we will be glad to help them out where their regular plumber is unable to take care of them in time. They respect us for not wanting to break into some other plumber's regular trade and swing to us if they ever become dissatisfied, or if they want something that we can furnish but which their regular plumber does not deal in. The delivery of the calendar furnishes a good opportunity to open conversation with people. It is a pleasant reminder if they are regular customers, and if they are not, it is a good way to let them know that we are in business and just what we have to offer. But aside from all this, Mr. Hickman more than earns his salary on the sales he makes.

"In building up a plumbing and heating business in this kind of a neighborhood, it is absolutely necessary to do high grade work. The people out here are all pretty well-to-do, they have very beautiful and well kept homes and dislike very much to have a workman clutter up the place any more than is absolutely necessary, and they certainly do not like to be compelled to call a man back because the work was carelessly done in the first place. For this reason it is necessary to educate the men to take care of this class of trade. Not every man will do for this neighborhood. Some can be taught in a short time, but others I simply have to let go entirely after using them a week or two. When a man is sent out on a job to fix a leak or do some other repair work, he is told to stay until he is certain that the work has been done right, and to be as neat about it as possible. If a job is poorly done, I have it done over again at my own expense and thus retain the goodwill of the customer. In fact, he is pretty likely to tell some of his friends about it and thus place me in a position to get their business and at a good price, for a great many of the people around here are perfectly willing to pay a little extra for an extra good grade of work.

"It is very important to get the peoples' confidence here, as a great many of them are away a good deal of the time. I just finished a job for a man who now is down in Florida. He had had more or less trouble with his bathroom fixtures and while away the housekeeper reported some more trouble. The owner asked me to look after it, and after looking the place over, I wrote to him and suggested a new arrangement with new fixtures and tiling. He simply answered that I should use my own judgment and go ahead with the work. After completing the work, I sent him a bill for $1600.00. He didn't make the slightest objection and sent the money. In many other cases the men working on a job notice something in bad condition and call attention to it, with the result that new fixtures are ordered or whatever else it might be that needs replacing. Information of this nature is also made use of by Mr. Hickman, for very often either himself or some other man working on a job notices that something is not in very good condition or that the customer is without something which they think he might be persuaded to buy. These tips are either followed up at once, or later when there is a little more time, or the time is a little more auspicious."

Mr. Jorgenson has three trucks which are kept busy at all times. One is a light Ford body with a box in the back in which are spigots, washers, caps, plugs, unions, ells, tees, tank washers, ball cocks, plunger washers, small pieces of pipe, stocks, dies, and various other little things for small repair work. The man who has this car does nothing but little quick repair jobs. He is given a list of about fifteen or twenty when he starts out, and simply does as many as he can get to by the end of the day, but he is never used on new work. Another light truck is used by the tinkers and is fitted with hooks on the sides for carrying pipe and ladders. The third truck is a heavier one used for going into town every day for material and for delivering material to the jobs. Solid tires are used on the rear wheels of the larger truck, but all the other tires have an inner tube made of a composition of air and rubber. "These inner tubes," said Mr. Jorgenson, "cost us six or seven times as much as the ordinary inner tubes in the first place, but we have no tire



High Grade Fixtures Are Demanded by Mr. Jorgenson's Customers.

trouble until the outer shoe is worn clear down to the inner tube. It is a big saving in time, for when we had the regular inner tubes, we were continually having a car laid up with punctures. The men hated to fix them and would rather sit around and wait, and in this way we lost considerable time. We feel that we have solved the tire trouble for this business by using the composition inner tube."

Mr. Jorgenson has proved himself a "live-wire" who uses modern methods in the plumbing and heating business. He has learned that he will have more money at the end of the year if he does a moderate sized business with a fair profit on each job, than he would if he did a much larger business which had been figured without allowing a safe margin for overhead and profit. He has also found that people are willing to pay a fair price when convinced that they are being treated squarely in the matters of quality of service and justness of price.

SERVICE! WHAT IS IT?

We hear a lot nowadays about service. Men in all lines of business have adopted such slogans as "Service First," and half a dozen of similar import. We see the word used in this connection so often that we sometimes wonder if the man who uses it really means what he says, or has just picked it up as a catchy advertising possibility.

To be of real service to a customer means something more than bowing and smiling when the customer enters, promising to deliver his purchases without charge, or rushing around to wait on him.

Real service comes in helping the customer to get that article that will best suit his wants.

If you can show a customer or a prospective customer that he will be healthier and happier with new bath room fixtures in place of the out-of-date ones which he may have, you are doing him a service, and helping yourself as well.

If you can convince a customer that he can save several tons of coal a year by replacing his heater you are serving him.

If on the other hand you talk him into buying something that he doesn't need you are not serving him and you are hurting yourself.

"Service" is a good motto for any business man if it is lived up to. Oftentimes giving your honest advice to a customer may result in loss of a job which you might have talked him into; but that is service. And in the long run it pays good dividends.

Contract Not to Engage in Plumbing Business.

A firm that was in the business of plumbing and furnishing and repairing windmills, and in the sale of plumbing wares and parts thereof, bought out the business of a man doing the same kind of business in the same town. The contract or bill of sale stated that it was part of the consideration that the seller obligated himself that he would not again enter into competition in the plumbing and windmill business or sale or work, either directly or indirectly, in said town. In a suit brought by the members of the firm therefor, they obtained a judgment enjoining and directing this seller from pursuing a competitive business in said town.

The Court of Civil Appeals of Texas, in reviewing the case, says, 208 Southwestern Reporter, 369, that the defendant contended, among other things, to the effect that the contract was in violation of the anti-trust and monopoly laws of Texas, that the contract was void in that the time limit was not to any number of years or space of time; that the contract was against public policy, in that it was shown that the plumbing business was a useful business in which the public of the town was interested, and that it was unreasonable in its requirements, and in that particular was contrary to the common law. He also averred that he and one of the members of the plaintiff firm were the only master plumbers in the town, and that the town was in need of the plumbers, alleging that a great per cent of the inhabitants of the town were using the sewer and waterworks, which required the business of master plumbers, and that there was sufficient work for them, and that the citizens of the town had to apply to outside sources for competent plumbers, etc.; that the war brought about conditions making it hard to obtain plumbers, and that the contract was unreasonable in restricting the town to one master plumber, etc.

But the court does not think that the contract was subject to the interpretation which the defendant put upon it. The restriction as to time was not definite, but the court does not think the duration of the restriction unlimited. The contract provided that the defendant was "not to so enter again into competition with said parties" (the plaintiffs). This was further limited to the plumbing and windmill business in the town. The defendant in his brief asserted that the contract was a restriction for all time. Obviously this was incorrect.

It is the court's view the contract as set up and under the allegations was not void at the common law or against public policy. The contract on its face would not establish a trust as defined in article 7796. It did not evidence a combination of "capital, skill or acts" for the purpose of accomplishing the things named under the seventh subdivision thereof.

Nor does the court think that the contract evidenced a conspiracy in restraint of trade, denounced by article 7798; that is, an agreement to refuse to buy from or sell to any other person, firm, etc., any article of merchandise, or to boycott other persons.

In the court's opinion the contract showed that the money paid by the plaintiffs for the business and for the reservation was the consideration for the reservation so bought and sold. This recitation was more than a mere receipt for the money; It was in its nature contractual; and, unless there was an allegation of fraud or mistake in so writing the contract, the evidence that there was no consideration would not be admissible.

But the court holds that it was error to render a judgment on the pleadings without any evidence being introduced.

ZIRCONIUM, THE MYSTERY METAL.

Resists Heat and Acids.

On account of the mysterious properties and uses attributed in the popular mind to zirconium it has at times been styled "the mystery metal," says the United States Bureau of Mines, Washington, D. C. An investigation regarding the preparation and uses of metallic zirconium and its salts has been conducted by the Bureau of Mines, and the results are just now made public.

The compounds of zirconium have numerous uses, and more uses will doubtless be found. Investigations in recent years have indicated that sintered or coherent zirconium metal is very resistive to acids; that it can be used for electrodes, and it probably will find metallurgical uses. A steel containing zirconium has been proposed for use in armour plate and automobile parts and nickel-zirconium alloys have been suggested for high speed cutting tools and for cutlery. Numerous articles in scientific journals have recommended the use of zirconium oxide as a refractory, an abrasive, a pigment in paints and as an opaquing agent in enamel ware. The salts have been used in the textile industry as a mordant or dye fixing agency and also for weighing silk.

Zirkite fire brick are used for furnace lining, as well as for other purposes where a refractory having a low coefficient of expansion, high melting point and maximum resistance to slag corrosion is demanded. Although zirconium oxide has not proved satisfactory for gas mantles nor for arc lamps it has been used for polishing powders, insulators for both heat and electricity.

Being non-poisonous, zirconium oxide is finding a use in paints and lacquers, where its resistivity to physical and chemical agents is proving highly valuable. As an abrasive zirconium, zirconium silicide and zirconium carbide are suggested for a variety of uses, the carbide particularly as a substitute for the diamond in cutting glass. Zirconium oxide, because of its non-toxic nature, is used in place of bismuth, nitrate of carbonate in Rontgen-therapy.

Zircon is found in considerable amounts in many placer deposits derived from disintegration of granitic and pegmatic rocks. The best known deposits in the United States are near Green River, Henderson County, N. C., and in the Wichita Mountains, near Cache, Okla. Zircon is found most abundantly in certain syenites of Norway and occurs in crystalline limestone at Grenville and elsewhere in Canada. Dana states that zircon occurs in various localities in North America, including Litchfield, Md.; Essex County, Orange County, and in St. Lawrence County, New York; near Reading, Pa.; abundantly in the gold sands of Burke, McDowell, Polk, Rutherford, Henderson and other counties in North Carolina; with astrophyilite, etc., in the Pikes Peak region in El Paso County and at Cheyenne Mountain, Colo. In California and elsewhere it occurs in gold-bearing gravels.

"RETURNING *the* WATER *to the* BOILER"

The Fifth and Last of a Series of Articles Describing and Illustrating Modern and Practical Methods of Returning the Water to the Boiler

By L. M. Emmett

(Continued from Page 94 in the October 15th Issue.)

IN factories and similar buildings, and in large office buildings, power is usually developed on the premises, and this usually affords an ample amount of steam to heat the building. In order to avoid excessive back pressure at the engines, the systems are usually the vacuum type, having reciprocating pump operated by steam for inducing the vacuum.

Fig. 22 shows the principal apparatus made use of in such a system. A vacuum pump is shown at the lower left to which all of the returns from the heating system are connected. A suction strainer is placed in the line to protect the cylinders from the scouring effect of grit, sand, and scale. Steam is supplied from the high pressure main, and the pump is speeded up, or slowed down, or even stopped, should it be required, by means of an automatic pump governor. This latter device consists of a balanced valve with a stem extending downward, and attached to a diaphragm; the bottom of the diaphragm chamber connects by means of a pipe of small diameter to the suction line of the vacuum pump. As vacuum of a sufficient degree is obtained in the suction line, the valve is acted upon to throttle the steam and thus slow down the pump. When first starting up, the valve is held wide open by a spring. It should be by-passed in the manner shown, so that the pump may be regulated by hand, in the event of the governor needing repairs. Exhaust from the pump connects to the main exhaust line as shown. The condensation and air entering the pump from the return lines, is discharged to the top of the feed-water heater. This is of the "open" type, and accumulation of air is relieved to the atmosphere through an open vent pipe. The heater is supplied with cold water connection (not shown in drawing) to furnish "make-up" water. The heated water is drawn from the feed-water heater, as needed, by a reciprocating boiler feed pump and discharged to boiler as shown. The main exhaust line is brought beneath the floor to a point at one side of the heater, and is then brought vertically and discharged to the atmosphere at a point above the roof. A valved connection leads to the heater for heating the incoming "make-up" water. A back-pressure valve is located at a point above all other connections, and this is set, by means of a weight, or spring, or sometimes by both, so as to maintain the required amount of back pressure in the system. From the side of the vertical exhaust line, below the back pressure valve, a connection is taken off for the heating system. This is provided with an oil separator (in addition to the oil sepa-

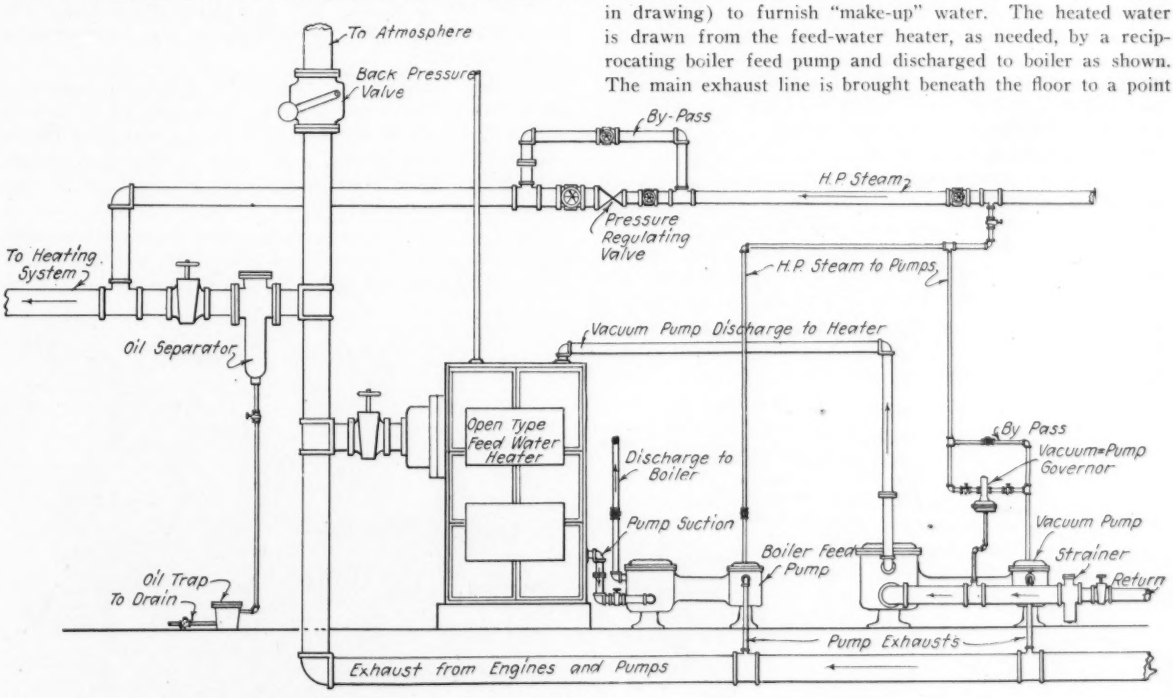


Fig. 22.

rator in the feed-water heater) and a gate valve. Should there not be sufficient steam furnished by the exhaust to supply the heating system, additional steam is supplied from the high-pressure line, through the pressure regulating valve shown at the top-center of the drawing.

An interesting application is shown in Fig. 23, which shows a receiving tank for collecting the "make-up" water and the heating returns. This installation is in a steel rolling mill, and originally consisted only of the boilers and the boiler feed pump, the cold water from the roof tank connecting directly

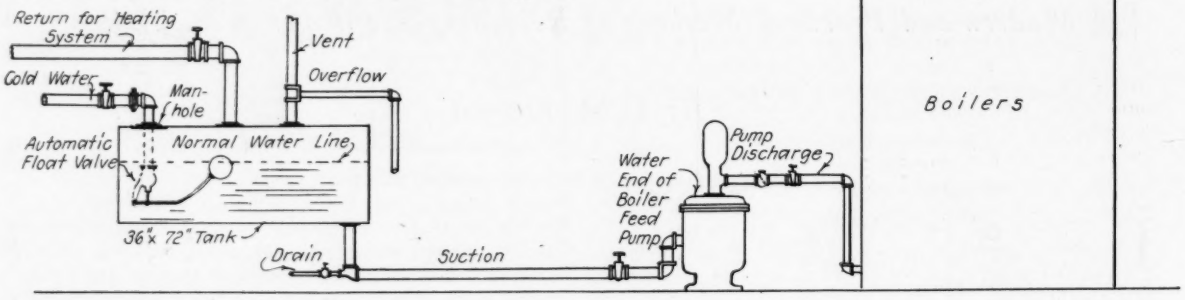


Fig. 23.

to the pump suction. The steam supplied by the boiler was used in galvanizing tanks, etc., and no condensation was brought back to the boilers. However, it became necessary to install a heating plant in one group of building, and the condensation was brought back in the manner shown in the drawing. A 36x72-inch tank is provided, having bottom opening for pump suction, top openings for vent and overflow, heating returns and cold water. The cold water line continues into the tank and is furnished with an automatic angle float valve; this cuts off the cold water supply when the tank is about two-thirds full, thus permitting space for the condensation from the heating system to collect. In the event of an excess supply, the surplus water is carried out at the overflow. This installation operates very smoothly and with very little attention. The normal position of the valves on the cold water inlet, the heating returns, and the pump suction is in the open position. The steam supply valve (not shown on drawing) to the pump, is also open. The valve on the discharge line from the pump to the boiler is the only valve operated by the attendant; this is opened, or closed, or throttled part way as required.

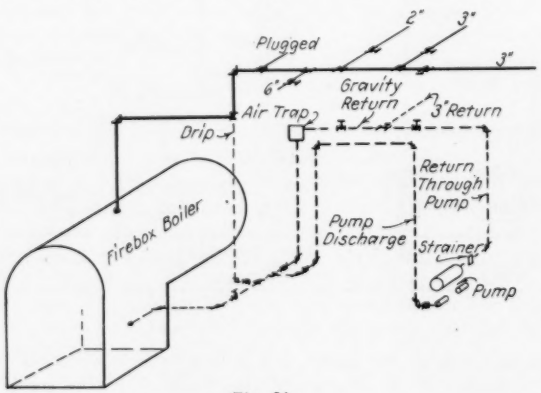


Fig. 24.

In low pressure heating plants simplicity, both in installation and operation, is very desirable. In vacuum systems, where gravity returns to the boiler are not feasible, it is very desirable that the means of returning water and separating the air be made as simple as possible. Formerly, as shown in this article previously, two or more devices were used to do this.

Fig. 24 shows a layout made by H. M. Miller for the F. Rosenberg Elevator Co. in Milwaukee. This is designed as a vacuum system, with provision for operating as a gravity system when the weather is not severely cold. It is partly a fan and partly a direct system of heating. The heating surface consists of direct cast iron radiation, and cast iron Vento blast radiation for the fan system, all being located above the water line of the boiler.

In mild weather the condensation is returned by gravity, the air being eliminated by an air separating tank located above the water line as shown. Two gate valves are inserted in the return branches, so that the condensation may be diverted in either direction.

In severe weather when considerable difference in pressure exists between the supply and the return sides of the system, the gate valve on the line leading to the air separating tank is closed, and the one leading to the pump is opened. This permits the raising of pressure on the supply side and carrying a vacuum on the returns.

The pump used is the very modern type, being self-contained, and combining both vacuum and boiler feed, and having condensation receiver, air separator, and suction strainer all included in the single apparatus. It is operated by a direct-connceted motor. The complete assembly is shown in Fig. 25. A cross-section of the pump, showing the centrifugal water pump, and the air rotor is shown in Fig. 26. The air rotor is shown in detail in Fig. 27.

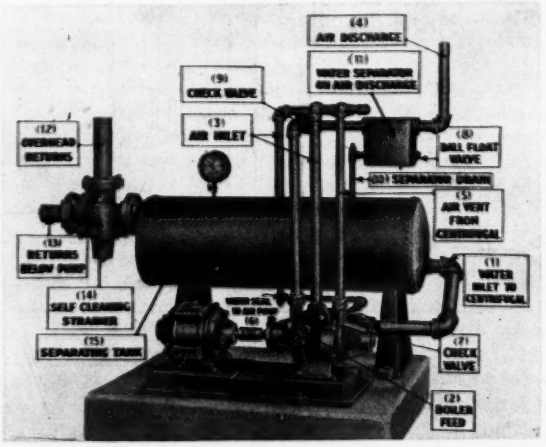


Fig. 25.

The pump is composed of two distinct turbine units, both

mounted on a single shaft, and enclosed in a single casing. The motor which operates the pump is attached to an extension of the same shaft. The air separating tank and condensation receiver is mounted on separate supports and pipe connections made as shown in Fig. 25. The returns from the heating system enter the tank through the strainer (14). A small water

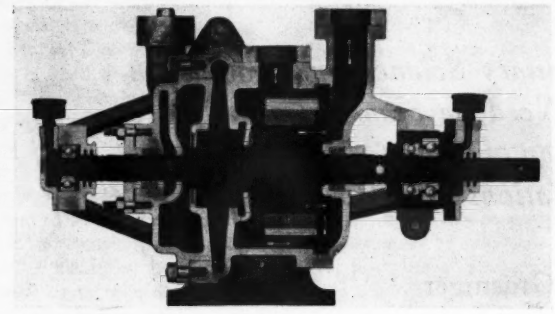


Fig. 26.

seal (6) leads to the air rotor chamber, and furnishes the necessary seal for that portion of the device. The suction connection from the tank to the pump is indicated at (1); an air inlet leads from the top of the tank to the pump chamber (pipes 3); and is then passed on to the atmosphere through the pipe and check valve (9), having the water entrained with it separated in the chamber (11). The centrifugal pump is so designed as to not pump air; the water is discharged by it to the boiler through the pipe and check valve (2).

A reference to Fig. 27 will show the ingenious arrangement for producing a vacuum in the return lines, and discharging the air which has been drawn into the air rotor. A revolving impeller is shown, operating in an oval shaped chamber; four ports are located at the back, alternately inlet and outlet; the ports and the oval shaped chamber are in a fixed position; the impeller revolves. Some water is admitted to the chamber

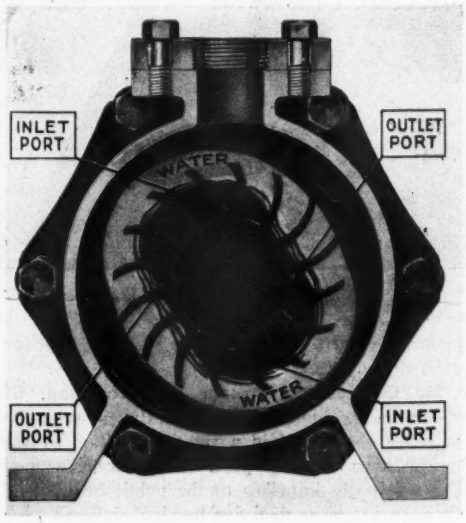


Fig. 27.

through the aforementioned water seal, and this is set in motion by the revolution of the impeller; the narrowed portion of the oval, in relation to the outlet ports, determines the amount of water held in the chamber; the water is forced to the outer sides and on reaching the inlet port has a suction effect on the inlet and carrying the air onward it begins to be compressed at a point opposite the next outlet port, due to the narrowing of the oval. Air is thus collected through two ports and discharged through two ports.

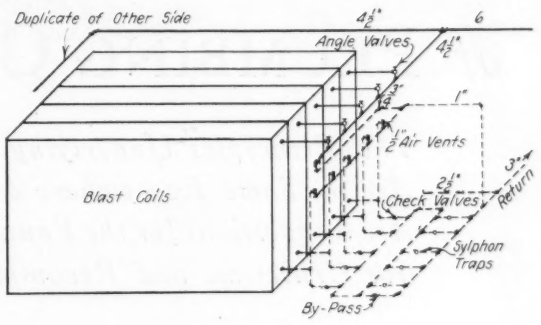


Fig. 28.

The pipe connections to the fan coils for supplying steam, and returning the condensation and air, are shown in Fig. 28.

The End.

The report of car loadings for the week ended October 8 showed a total of 895,740 cars, a decrease of 5,338 cars compared with the 901,078 loaded with freight for the preceding week. There were 115,926 fewer cars in the week ended October 8 than at the same time a year ago, and 86,431 fewer compared with the corresponding week of 1919. Increases in the week of October 8 were confined to live stock, coal and coke.

Democratic members of Senate finance committee have decided on concerted movement to secure a substantial reduction of income taxes paid by persons with moderate incomes. They will press for reduction to 2 per cent on incomes of $5,000 to $10,000 and 6 per cent on incomes from $10,000 to $15,000. Present tax is 4 per cent on $5,000 or less and 8 per cent above $5,000.

A compilation by the Bureau of Railway Economics shows that since 1915 there has been an increase in rates amounting to 78 per cent, while the wage scale has advanced 119 per cent. The rate increases were as follows: June 27, 1917, 3.7 per cent; March 15, 1918, 2 per cent; June 25, 1918, 25 per cent, and September 1, 1920, 34 per cent. Increases in pay to workers were as follows: 1916-17, 7 per cent over 1915; 1917, 13 per cent over 1916; 1918, 41 per cent over 1917; 1919, 5 per cent over 1918, and 1920 22 per cent over 1919.

Unlimited markets for American merchandise exist in the Near East, according to one observer, but only if the goods are suited to the market. There is evidence that during the war the Germans did not lose their instinct for adaptability. A story comes from Egypt, for instance, about a brisk trade in "American" clothing for young men, among the natives. This clothing is made in Germany, in close imitation of certain American styles, having well-padded shoulders, slashed pockets, and "box pants," and is accompanied with shoes "having bumps on the toes." The effect seems to be enticing, and the garments are sold by a French firm in its best Parisian manner. In Anatolia it appears that rubber overshoes are a necessity of life. A large American consignment remains unsold, according to one story, because the American variety has not the knob at the back which the Anatolian demands, in order that he may kick off his overshoes in his traditional fashion. Our runabout automobiles and sedans do not afford room, it seems, for Turkish and Levantine prejudices. The owner of a car in those parts often has serious objections to "riding in the same enclosure" with the chauffeur, and he usually cannot himself drive such a machine, because, it seems, our automobiles are a little too complicated for him to manipulate properly.

BASIS *for* STANDARDS *for* ADOPTION *of* PLUMBING CODES—PART XVI

The Principles Underlying Sanitary Science and Sanitation Are the Same Everywhere and Need be Standardized—Here Are Suggestions for the Foundation of Codes—Your Constructive Criticisms and Recommendations Are Cordially Invited

By Wm. C. Groeniger

Consulting Sanitary Engineer, President, American Society of Sanitary Engineering

(Continued from Page 102 in the October 15th Issue.)

Offenses Against Public Health.

Sec. 21. Various Nuisances.—Whoever erects, continues, uses, or maintains a building, structure or place for the exercise of a trade, employment or business, or for the keeping or feeding of any animal which, by occasioning noxious exhalations or noisome or offensive smells, becomes injurious to the health, comfort or property of individuals, or of the public, or causes or suffers offal, filthy or noisome substances to be collected or remain in any place to the damage or prejudice of others or of the public, or unlawfully obstructs or impedes the passage of a navigable river, harbor, or collection of water, or corrupts or renders unwholesome or impure, a watecourse, stream or water, or unlawfully diverts such watercourse from its natural course or state to the injury or prejudice of others, shall be fined not more than five hundred dollars.

Sec. 22. Putting Dead Animals in Canals.—Whoever wilfully places, or causes to be placed, a dead animal in a canal or slack water pool belonging to the state, shall be fined not less than five dollars nor more than twenty dollars. Such offender may be prosecuted before any justice of the peace in any county where he may be found.

Sec. 23. Throwing Refuse, Oil or Filth into Lakes, Streams or Drains.—Whoever intentionally throws, deposits or permits to be thrown or deposited, coal dirt, coal slack, coal screenings or coal refuse from coal mines, refuse or filth from a coal oil refinery or gas works, or whey or filthy drainage from a cheese factory into a river, lake, pond, or stream, or a place from which it may wash therein, or causes or permits petroleum, crude oil, or a compound mixture, residuum of oil or filth from oil well, oil tank, oil vat, or place of deposit of crude or refined oil, to run into or be poured, emptied or thrown into a river, ditch, drain or watercourse, or into a place from which it may run or wash therein, upon conviction in the county in which such coal mine, coal oil refinery, gas works, cheese factory, oil well, oil tank, oil vat, or place of deposit of crude or refined oil is situated, shall be fined not less than fifty dollars nor more than one thousand dollars.

Sec. 24. Deposits of Dead Animals, Offal, Etc., upon Land or Water.—Whoever puts the carcass of a dead animal or the offal from a slaughter house, butcher's establishment, packing house or fish house or spoiled meat, spoiled fish, or other putrid substance or the contents of a privy vault, upon or into a lake, river, bay, creek, pond, canal, road, street, alley, lot, field, meadow, public ground, market space or common, or, being the owner or occupant of such place knowingly permits such thing to remain therein to the annoyance of any citizen or neglects to remove or abate the nuisance occasioned thereby within twenty-four hours after knowledge of the existence thereof, or after notice thereof in writing from a road superintendent, constable, trustee or health officer of a municipal corporation or township in which such nuisance exists or from a county commissioner of such county, shall be fined not less than ten dollars nor more than fifty dollars, and in default of

Laying a 12-Inch Water Main.

the payment of such fine and costs, shall be imprisoned not more than thirty days.

Sec. 25. Obstructing Stream or Producing Stagnant Water.—Whoever builds, erects, continues or maintains a dam or other obstruction in a river, or stream of water and thereby raises an artificial pond or produces stagnant water which is manifestly injurious to the public health and safety, shall be fined not more than five hundred dollars.

Sec. 26. Obstructing Ditch or Drain Constructed by Taxation.—Whoever wilfully obstructs a ditch or drain or water course constructed by order of a board of county commissioners or township trustees, or diverts the water therefrom, shall be fined not less than ten dollars nor more than one hundred dollars.

Sec. 27. Defiling Spring or Well.—Whoever maliciously puts a dead animal, carcass or part thereof, or other putrid, nauseous or offensive substance into, or befouls a well, spring,

brook or branch of running water, or a reservoir of a waterworks, of which use is or may be made for domestic purposes, shall be fined not less than five dollars nor more than fifty dollars or imprisoned not more than sixty days, or both.

Sec. 28. Syrups, Brine, Etc.—Only potable water shall be used for making syrups or brine for canned fruits or vegetables or for washing equipment coming in contact with such material intended for canning.

Sec. 29. Water Supplies.—No public or private water supply shall be used in a sanitary district unless such supply has been examined and approved by the sanitary inspector in the name of the state department of health. Any water supply found to be contaminated or unsafe for domestic use shall be condemned as a public nuisance and shall be made unavailable for use and be permanently abandoned. If a water supply is found to be subject to possible contamination and can be made safe by removing the source of contamination or by other corrective measures, it shall be placarded as "unsafe" and shall not be again used until corrections have been made as ordered by the sanitary inspector.

Municipal Authority in Regard to Appropriation of Property, Water Polution and Water Supply.

Sec. 30. Appropriation of Property.—Municipal corporations shall have special power to appropriate, enter upon, and hold real estate within their corporate limits. Such power shall be exercised for the purposes, and in the manner provided in this chapter.

(a.) For constructing, opening, excavating, improving, or extending any canal, or water course, located in whole or in part within the limits of the corporation or adjacent and contiguous thereto, and which is not owned in whole or in part by the state, or by a company or individual authorized by law to make such improvement.

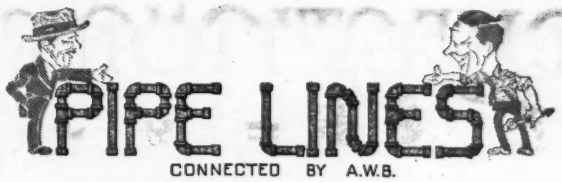
(b.) For sewers, drains, ditches, public urinals, bathhouses, water closets and sewage and garbage disposal plants and farms.

(c.) For providing for a supply of water for itself and its inhabitants by the construction of wells, pumps, cisterns, aqueducts, water pipes, dams, reservoir sites and water works, and for the protection thereof; and to provide for a supply of water for itself and its inhabitants, any municipal corporation may appropriate property within or without the limits of the corporation; and for this purpose any such municipal corporation may appropriate in the manner provided in this chapter, any property or right or interest therein, theretofore acquired by any private corporation for any purpose by appropriation proceedings or otherwise. Either party to such appropriation proceedings shall have the same right to a change of venue as is now given by law in the trial of civil actions.

Sec. 31. Jurisdiction of Municipality to Prevent Water Pollution.—Whoever pollutes a running stream, the water of which is used for domestic purposes by a municipality, by putting therein a putrid or offensive substance, injurious to health, shall be fined not less than five dollars nor more than five hundred dollars. The director of public service or board of trustees of public affairs of a municipal corporation shall enforce the provisions of this section. The jurisdiction of a municpal corporation to prevent pollution of its water supply and to provide penalty therefor, shall extend twenty miles beyond the corporation limits.

Sec. 32. Water Supply.—To provide for a supply of water, by the construction of wells, pumps, cisterns, aqueducts, water pipes, reservoirs, and waterworks, for the protection thereof, and to prevent unnecessary waste of water, and the pollution thereof. To apply moneys, received as charges for water to the maintenance, construction, enlargement and extension of the works, and to extinguishment of any indebtedness created therefor.

(To be Continued.)



SEND IT IN.

If you know a joke that's worth a grin,
Send it in;
To keep it to yourself makes you thin,
Send it in.
An epigram or verse,
Original or worse,
Be it long, short or terse—
Send it in.
To miss some news would be a sin,
Send it in;
About your business, friends or kin,
Send it in.
It may be old and gray'd,
It may be newly laid,
If it's tied to the trade—
Send it in. A. W. B.

AS THE SCOTCH PLAY.

Two old Scotch contractors, Robertson and Campbell, were playing a game of golf. They had played seventeen holes without saying a word. Not a word had either of them spoken. In driving from the eighteenth tee, Campbell made a particularly good drive.

Said Robertson: "That were a good drive there, me lad."
Campbell: "Shut up, ye old chatterbox." W. H., Newark, N. J.

SCIENTIFIC SALESMANSHIP.

Selling a heating plant to a man who came in to buy a lid-lifter for a stove. SPEED, Indianapolis.

HOW'S BUSINESS.

"On the level," said the carpenter.
"Slack," said the plasterer.
"Out o' joint," said the plumber.
"Steaming," said the heating contractor.
B. E. H., Duluth.

Old King Cole was a merry old soul, a merry old soul I say; he called for his soap, his brush and towel, for he took a bath each day. W. S. W., Toledo.

THE WEEK'S BEST WHEEZE.

Jonah and the Whale.

Jonah Bird was a traveling salesman in a hurry to get a shave. The barber shop was crowded. He rushed in shouting: "Here! Didn't you hear about it? There's a whale down at the depot!" "A whale?" echoed the waiting customers. And they grabbed their hats and rushed through the door. Ten minutes later Jonah left the barber shop brushing talcum from his chin. People were hurrying in the direction of the railroad. An old man came puffing along. "What's your rush?" asked Jonah. "Why," answered the old man, without stopping, "there's a whale down to the depot—yes sir, a whale!" Jonah mused a moment, "By George, maybe there is a whale down there." And he turned and joined the procession. Felix, New York.

A man who doesn't take pride in his work soon loses pride in himself.

PASS THE SOAP.

Since the movies have glorified water, I've taken a great fancy to it. Most of the lady stars have improved our eyesight with bath tub scenes. That's what we want—lots of clean pictures. A picture a day, and a bath with every picture. Am I right? The ayes have it. D. H., Chicago.

And now that we have moved to 1900 Prairie Avenue, if you haven't the time to write out your best wheeze, come in and tell it to us, and see our new home. A. W. B.

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

A PROBLEM IN LAUNDRY HEATING AND DRYING.

Editor, "Domestic Engineering": As a reader of your valuable journal, I will be greatly favored if you could give me a little information on the enclosed plan of a small job I have just completed, which works all right, but for a little dispute

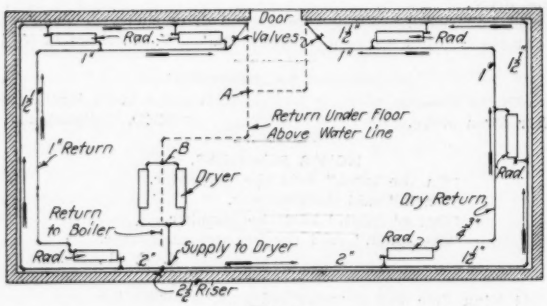


Fig. 1.

between one of the firm and myself, the fitter who installed the work according to plans given by the firm. The main rises straight from the basement to the ceiling of the first floor and is run over, supplying six wall radiators, which are connected at the top and valved as usual. At the bottom

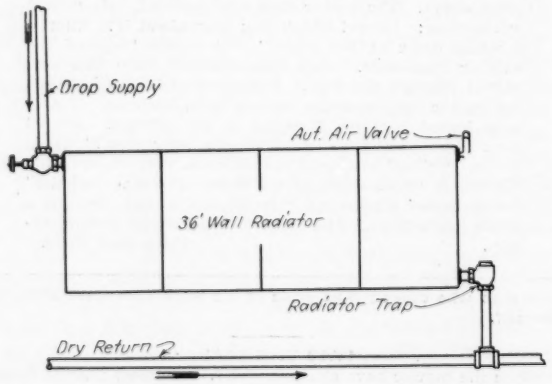


Fig. 2.

there is a ¾-inch return. The building in which the work was installed is used by a laundry, and there are times when they may want to run steam only to radiators marked "dryers." My firm did not want to put a valve on the main above the connection to same, so when dryers are run steam will be on the main right around to boiler. What I said was that although the valves at the top of the radiator were closed it would be necessary to valve the return where it entered main return to prevent water and steam backing up into radiators, which I did under protest from the firm.

Canada. Steam Fitter.

The sketch submitted is shown by Fig. 1. For convenience in illustrating we have followed correspondent's method of indicating the return mains on the inside of the lines representing the steam mains. We assume that the work is installed in such a manner that these return lines run around the wall below the radiators and at points on

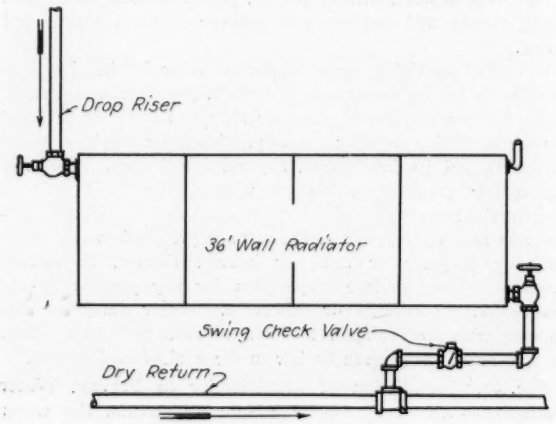


Fig. 3.

either side of the door drop through the floor to the ceiling of the basement where they are connected as shown by dotted line. The return from the radiators marked "Dryer" drop through the floor and connect into this return.

Correspondent is right as to the placing of valves on the returns from the radiators. A better plan would be to valve the riser supplying steam to the radiators and the return from the radiators as this method would allow the heating apparatus to be cut out entirely when not required. The dryer could then be operated independently.

The method of connecting the supply to the radiators marked "Dryer" is not clear. If the supply is taken from the main riser the valve on the riser, as mentioned above, should be placed above the connection for the dryer. If the supply to the dryer is piped direct from the boiler the valve on the riser can be placed at any convenient point.

This inquiry brings to attention a point not shown or mentioned in the letter of correspondent. The return from a radiator should not be connected into a dry return without trapping or checking it; also, no drip or return line should be connected into another return except below the water line. The latter condition seems to have been disregarded at point marked A on Fig. 1 where two dry returns are connected together, and also at point marked B where the return from the dryer is connected.

Correspondent states that the radiators are "connected at the top and valved as usual." A radiator trap, float or thermostatic, should be used on the return of all radiators as shown by Fig. 2, or a horizontal check valve should be placed in each return as illustrated by Fig. 3.

A GRAVITY WATER HEATING SYSTEM WITH SOME RADIATORS ON LEVEL WITH BOILER.

Editor, "Domestic Engineering": I would like to know the best way to connect a hot water heating system in a three-story building with the boiler in the basement, where several radiators are to be placed on the level with the boiler. I plan to trap the return as shown in the accompanying rough sketch, but would like to have your advice before going ahead with the work.

Jersey City, N. J. V. A. J.

The sketch submitted with the above letter is drawn partly in plan and partly in elevation, and therefore we cannot reproduce it in detail.

Substantially, as indicated by the letter, the plan shows a proposed method of installing a gravity hot water heating system in a three-story building, the basement of which is heated by radiators located on a level with the hot water boiler. The mains are run on the ceiling of the basement, and up-fed risers supply the radiators located upon the several floors above and down-fed or drop risers supply the basement radiators. The returns from the basement radiators are run below the floor and therefore are trapped. Fig. 1 is a sketch, which shows our interpretation of the suggested method. The return from the upper floors and the return mains are not indicated.

If the work is installed as shown, the circulation through the basement radiators will be very sluggish or feeble. Provided there is an attic to the building or space in which the mains can run, it is better to install an overhead system of piping. Run the main supply to the top of the building at some convenient point, and there supply distributing mains which in turn will supply drop risers to the radiators located on the floors below. If this method is followed, there will be

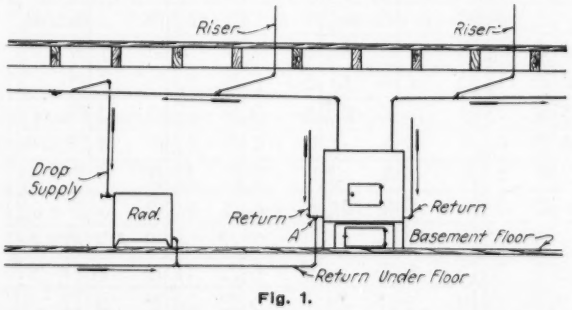


Fig. 1.

a good circulation through the basement radiators, and the weight of the water will force the circulation through any trapped piping.

If the structural conditions at the building are such that it is impracticable to install an overhead system, the next best method is illustrated by Fig. 2. The drop supply to a basement radiator should be taken from a flow riser to a radiator located on an upper floor, as indicated by sketch. This flow riser should be of sufficient capacity to supply the amount of radiation served by it, a reducing tee being used at point marked A. A little larger pipe than usual should be used to supply the basement radiator. Radiators of 50 sq. ft. or less should be supplied by a 1-inch pipe, and

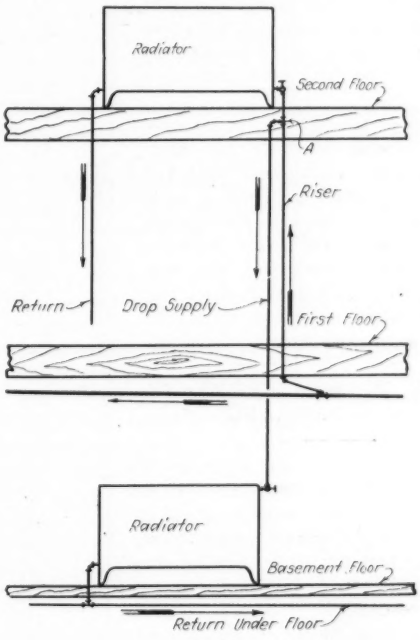


Fig. 2.

radiators of from 50 to 85 sq. ft. by a 1¼-inch drop. Radiators larger than 85 sq. ft. should be supplied by a 1½-inch pipe. The higher the point at which the drop riser can be connected, the better will be the circulation through the basement radiator connected, that is, it is better to drop from the third floor if it is possible to do so. The trapped return from basement radiators should be connected into the side of the main return at point marked A on Fig. 1.

QUESTIONS THE PRACTICE OF CONNECTING RADIATORS TO RANGE BOILERS.

Editor, "Domestic Engineering": On page 480 in the September 10th issue you have a sketch showing two radiators connected with a range boiler, published in answer to a question from F. M. J. in Pennsylvania. This suggests to me a similar point brought up here some time ago, that cast iron radiators should not be subjected to that much pressure. Would you consider that there would be any danger of cracking the radiators?

Minneapolis, Minn. R. F. B.

It is not unusual to find cast iron radiators used in connection with hot water pressure work, and frequently they may be found on high pressure steam work, though we think that in general it is poor practice to subject them to pressures in excess of fifteen or twenty pounds.

As used in connection with a tank heater system, as shown in our answer to F. M. J. in the September 10th issue, we think that the frequent use of hot water at the plumbing fixtures will prevent the accumulation of any excessive pressure, that is a pressure in excess of the city water pressure

of 55 pounds. As to this pressure, if there was any thought of it being too great for the strength of the radiators, it might be well to use a pressure reducing valve on the street supply to the building. This method is followed in localities where the city water pressure is unusually high.

Correspondent should not lose sight of the fact that the radiators will stand quite as much pressure as many of the plumbing connections and fixtures now used.

Incident to this discussion, we have in mind several overhead hot water heating systems installed in eight and nine-story buildings in which a pressure of probably forty to fifty pounds is exerted upon the lower radiators and the boiler castings. We have known many such installations that have been in use for many years without damage to the fixtures.

TABLE OF MEASUREMENTS FOR 45-DEGREE ANGLES.

Editor, "Domestic Engineering":—I have often seen questions about how to measure 45-degree angles in your "Questions and Answers" department, and think that my table covering this question will prove of interest to many of your readers.

This table can be cut out and framed and hung in the shop for ready reference in cutting pipe to sketch. A glance at the table will show that it covers measurements from 1 inch to 20 ft.

William J. Sherry.

West New York, N. Y.

We are under obligation to Mr. Sherry for his courtesy in this matter and take pleasure in publishing his table herewith.—Editor.

The German Outlook.

A partner in a leading international banking house with German affiliations said that unless the Allies promptly made some adjustment of the reparations payments required of Germany, that nation would shortly experience an economic and financial collapse. He expressed the opinion that this event would not be deferred until the date for the next important cash payment early in the spring, but would occur sooner as the conviction became more firmly rooted in the Germans that it was hopeless to try to pay.

People in Holland are so hard hit over the fall of the mark that German credit abroad is practically destroyed. It means that Germany must raise 2,000,000,000 gold marks in six months.

Table of Diagonals for 45° Triangles, Measuring from One Inch to Twenty Feet On the Sides.

SIDES FT.	SIDES IN.	DIAGONAL FT.	DIAGONAL IN.	SIDES FT.	SIDES IN.	DIAGONAL FT.	DIAGONAL IN.	SIDES FT.	SIDES IN.	DIAGONAL FT.	DIAGONAL IN.	SIDES FT.	SIDES IN.	DIAGONAL FT.	DIAGONAL IN.	SIDES FT.	SIDES IN.	DIAGONAL FT.	DIAGONAL IN.
	1		1 7/16	4	1	5	9 5/16	8	1	11	5 3/16	12	1	17	1 1/16	16	1	22	8 15/16
	2		2 13/16	4	2	5	10 11/16	8	2	11	6 5/8	12	2	17	2 7/16	16	2	22	10 3/8
	3		4 1/4	4	3	6	1/8	8	3	11	8	12	3	17	3 7/8	16	3	22	11 3/4
	4		5 5/8	4	4	6	1 9/16	8	4	11	9 7/16	12	4	17	5 5/16	16	4	23	1 3/16
	5		7 1/16	4	5	6	2 15/16	8	5	11	10 13/16	12	5	17	6 11/16	16	5	23	2 5/8
	6		8 1/2	4	6	6	4 3/8	8	6	12	1/4	12	6	17	8 1/8	16	6	23	4
	7		9 7/8	4	7	6	5 3/4	8	7	12	1 11/16	12	7	17	9 9/16	16	7	23	5 7/16
	8		11 5/16	4	8	6	7 3/16	8	8	12	3 1/16	12	8	17	10 15/16	16	8	23	6 13/16
	9		12 3/4	4	9	6	8 5/8	8	9	12	4 1/2	12	9	18	3/8	16	9	23	8 1/4
	10	1	2 1/8	4	10	6	10	8	10	12	5 7/8	12	10	18	1 13/16	16	10	23	9 11/16
	11	1	3 9/16	4	11	6	11 7/16	8	11	12	7 5/16	12	11	18	3 3/16	16	11	23	11 1/16
	12	1	5	5		7	7/8	9		12	8 3/4	13		18	4 5/8	17		24	1/2
1	1	1	6 3/8	5	1	7	2 1/4	9	1	12	10 1/8	13	1	18	6	17	1	24	1 15/16
1	2	1	7 13/16	5	2	7	3 11/16	9	2	12	11 9/16	13	2	18	7 7/16	17	2	24	3 5/16
1	3	1	9 3/16	5	3	7	5 1/16	9	3	13	1	13	3	18	8 7/8	17	3	24	4 3/4
1	4	1	10 5/8	5	4	7	6 1/2	9	4	13	2 3/8	13	4	18	10 1/4	17	4	24	6 1/8
1	5	2	1/16	5	5	7	7 15/16	9	5	13	3 13/16	13	5	18	11 11/16	17	5	24	7 9/16
1	6	2	1 7/16	5	6	7	9 15/16	9	6	13	5 1/4	13	6	19	1/8	17	6	24	9
1	7	2	2 7/8	5	7	7	10 3/4	9	7	13	6 5/8	13	7	19	2 1/2	17	7	24	10 3/8
1	8	2	4 5/16	5	8	8	3/16	9	8	13	8 1/16	13	8	19	3 15/16	17	8	24	11 13/16
1	9	2	5 11/16	5	9	8	1 9/16	9	9	13	9 7/16	13	9	19	5 5/16	17	9	25	1 1/4
1	10	2	7 1/8	5	10	8	3	9	10	13	10 7/8	13	10	19	6 3/4	17	10	25	2 5/8
1	11	2	8 1/2	5	11	8	4 7/16	9	11	14	5/16	13	11	19	8 3/16	17	11	25	4 1/16
2		2	9 15/16	6		8	5 15/16	10		14	1 11/16	14		19	9 9/16	18		25	5 1/2
2	1	2	11 3/8	6	1	8	7 1/4	10	1	14	3 1/8	14	1	19	11	18	1	25	6 7/8
2	2	3	3/4	6	2	8	8 5/16	10	2	14	4 9/16	14	2	20	7/16	18	2	25	8 5/16
2	3	3	2 3/16	6	3	8	10 1/16	10	3	14	5 15/16	14	3	20	1 13/16	18	3	25	9 11/16
2	4	3	3 5/16	6	4	8	11 1/2	10	4	14	7 3/8	14	4	20	3 1/4	18	4	25	11 1/8
2	5	3	5	6	5	9	7/8	10	5	14	8 3/4	14	5	20	4 11/16	18	5	26	9/16
2	6	3	6 7/16	6	6	9	2 5/16	10	6	14	10 3/16	14	6	20	6 1/16	18	6	26	1 15/16
2	7	3	7 13/16	6	7	9	3 3/4	10	7	14	11 5/8	14	7	20	7 1/2	18	7	26	3 3/8
2	8	3	9 1/4	6	8	9	5 1/8	10	8	15	1	14	8	20	8 7/8	18	8	26	4 13/16
2	9	3	10 11/16	6	9	9	6 1/2	10	9	15	2 7/16	14	9	20	10 5/16	18	9	26	6 3/16
2	10	4	1/16	6	10	9	7 15/16	10	10	15	3 7/8	14	10	20	11 3/4	18	10	26	7 5/8
2	11	4	1 1/2	6	11	9	9 3/8	10	11	15	5 1/4	14	11	21	1 1/8	18	11	26	9
3		4	2 15/16	7		9	10 13/16	11		15	6 11/16	15		21	2 9/16	19		26	10 7/16
3	1	4	4 5/16	7	1	10	3/16	11	1	15	8 1/16	15	1	21	4	19	1	26	11 7/8
3	2	4	5 3/4	7	2	10	1 5/8	11	2	15	9 1/2	15	2	21	5 3/8	19	2	27	1 1/4
3	3	4	7 3/16	7	3	10	3	11	3	15	10 15/16	15	3	21	6 13/16	19	3	27	2 11/16
3	4	4	8 9/16	7	4	10	4 7/16	11	4	16	3/8	15	4	21	8 3/16	19	4	27	4 1/16
3	5	4	10	7	5	10	5 7/8	11	5	16	1 3/4	15	5	21	9 5/8	19	5	27	5 1/2
3	6	4	11 3/8	7	6	10	7 1/4	11	6	16	3 3/16	15	6	21	11 1/16	19	6	27	6 15/16
3	7	5	1/16	7	7	10	8 11/16	11	7	16	4 9/16	15	7	22	7/16	19	7	27	8 5/16
3	8	5	1 1/4	7	8	10	10 1/8	11	8	16	6	15	8	22	1 7/8	19	8	27	9 3/4
3	9	5	2 5/8	7	9	10	11 1/2	11	9	16	7 3/8	15	9	22	3 5/16	19	9	27	11 3/16
3	10	5	4 1/16	7	10	11	15/16	11	10	16	8 13/16	15	10	22	4 11/16	19	10	28	9/16
3	11	5	5 7/16	7	11	11	2 3/8	11	11	16	10 1/4	15	11	22	6 1/8	19	11	28	2
4		5	6 7/8	8		11	3 3/4	12		16	11 5/8	16		22	7 1/2	20		28	3 7/16

Extreme Caution Must be Exercised in Taking Off Centers of Fittings in These Measurements

CLEANLINESS *a* BUSINESS ASSET

Additional Arguments from an Eminent Source Which Can be Used in Local Bath a Day Campaigns

PERSONAL cleanliness is a business as well as a social asset. Keeping clean helps to get a position, helps to hold it, and helps in the advancement to something better. In these days of unemployment and the insecurity of the job, the business value of a bath a day is worth thinking about.

This, in brief, is the keynote of a bulletin addressed to workers in stores, manufacturing plants and jobbing houses by the Industrial Research Bureau of Harvard University.

The bulletin points out that "personal attractiveness is dependent upon personal cleanliness"; that "the fresh, clean, well-groomed individual, trained to good habits, is attractive and a good advertisement." Not only is he a good advertisement for himself, but he is a good advertisement for the business he represents.

This brings the whole matter down to dollars and cents. The clean man is worth more to any firm than the man who is not clean. Therefore, a man's value to himself is, to a certain extent, measured by the number of baths he takes.

Every working human is interested in his pay envelope, which, so the saying goes, is close to his heart. This being true, a large public can be converted to a bath a day by showing that bathing and salary are closely related.

For this reason, if for no other, plumbing associations, manufacturers and jobbers, who are interested in a bath a day campaign, should find the following extracts from the Harvard bulletin good to use in newspapers, circulars and envelope enclosures.

Harvard Health Hints.

Personal cleanliness is a social and a business asset.

It helps to get a position, to keep it, or to get a better one.

Personal attractiveness is dependent upon personal cleanliness.

Not respectable dirt—dirt from the job, soot, or grime of today's work—but the odors of yesterday, the unshaven and unwashed face, are objectionable.

Cases of filth are common enough in industrial life to have them form a class of undesirables for employment.

Sickness may be caused by filth, while cleanliness favors health.

Typhus, common in Eastern Europe, is due to body lice, and body lice are due to the lack of frequent bathing.

Impetigo, a skin disease, all too common in American cities, is the result of filth.

Scabies (seven years' itch) common among school children, is easily prevented by moderate cleanliness.

It pays to form habits of cleanliness if only to prevent such diseases.

Self-respect may be created, increased and maintained by cleanliness of body and clothing.

The Morning Toilet.

On arising, brush the teeth; if you are a man, shave; take a cool sponge, shower or tub bath. This may be cold if you have trained your skin to react well. Rub dry with towel, and then take several long breaths to make you feel the glow of good health and vigor.

Some people find it more convenient to take their daily baths in the evening.

A regular hot "Saturday nighter" taken twice a week insures a thorough clean-up.

A tub is a necessity to every good American citizen.

After work hours a "scrub-up" is desirable before leaving the factory, shop, store or office.

Personal odors, not noticed by the individual himself, are often objectionable to others. They may be largely prevented by scrupulous cleanliness and a frequent change of clothes.

Further Needs of a Bathroom.

Investigation disclosed the fact that about one out of six girls in high schools have head lice. Good habits of cleanliness should prevent this.

Healthy hair is the result of a healthy scalp. The scalp may be kept clean and healthy by a thorough brushing morning and evening and proper shampooing.

A woman's hair should be shampooed at least once in three weeks.

A man should shampoo his head once a week. Some may require it twice a week, especially in summer.

The shampoo is done preferably with plenty of liquid soap, thoroughly lathered, and a stiff brush. Rinsing should be generous, under a shower or faucet.

Drinking water is an internal cleanser.

Everyone needs at least six glasses of water daily, and more in hot weather.

A mid-morning and mid-afternoon drink of water is a good habit.

Everyone needs enough exercise to produce a good perspiration at least once a week.

After exercise a bath washes off the perspiration and puts an edge on the appetite.

Bathe at least the face and hands before retiring.

A healthy, clean body chimes well with a clean, healthy mind. And a clean body and a clean mind go far toward making a good citizen.

Good for a Bath a Day.

The Harvard bulletin is being largely circulated. This means that it is being read by welfare workers, heads of industrial and mercantile organizations and many of their employes. All who read do not put into practice what they read. But some do. And so, from every bathing thought spread before the public will come converts to a bath a day.

In this missionary work we are doing you will find that it pays to quote from such a well-known institution as Harvard University.

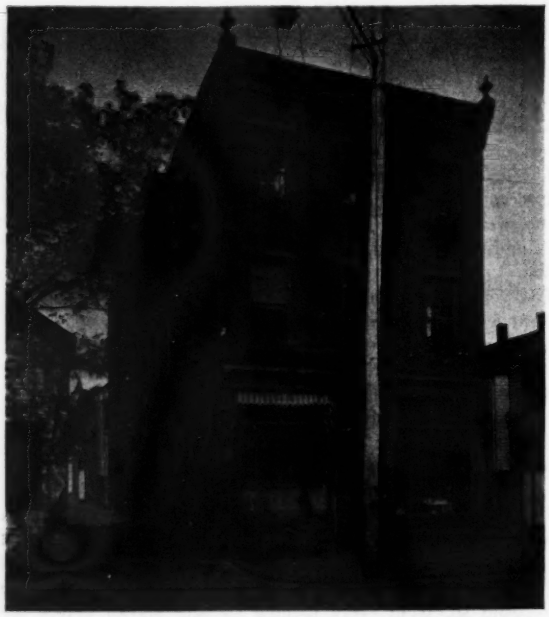
It takes a number of different arguments to appeal to a number of different people. One might take to the "Bath a Day" idea because of a promise of increased beauty; another for health's sake; a third for the glow of renewed vigor; a fourth for the hope of more dollars and cents. It doesn't matter why people take a bath so long as they take it. Nor does it matter how they take it, whether in a tub or under a shower. There has been considerable discussion during the past few months in various publications as to which is the preferable way, but the evidence is not conclusive for either. Both have their advantages and their stanch advocates, so that it resolves itself pretty much into a matter of personal preference.

Keep pecking away from every angle—keep at it all the time—and so sure as you do this the people of your community will get the habit, and in turn will bless you for leading them in the way they should go.

SIMPLICITY *is* KEYNOTE *of* THIS SYSTEM *of* BOOKKEEPING

Plumbing and Heating Contractor of Harrisburg, Pa., Has Developed a System of Records That Requires a Minimum of Work by Bookkeeper

THERE is no system of bookkeeping that is applicable to every line of business, nor will any one system meet all the requirements of every man engaged in one kind of business, such, for instance, as the plumbing and heating business of the contractor. Each man usually has some phase of the business about which he desires to have very carefully detailed information. Therefore, the system of bookkeeping that is best adapted to meet the needs of any particular



The Plumbing and Heating Establishment of Fisher Bros. & McClure, in Harrisburg, Pa.

contractor will depend somewhat on the size of his business, its character, whether it is a jobbing or a contracting business, and just what the contractor is most interested in knowing. Adequate records are required in any business, but they may be very simple and easily kept if designed for that purpose, as is proved by the system developed by H. B. McClure of Fisher Bros. & McClure, of Harrisburg, Pa., which is simplicity itself and required a minimum of work on the part of the bookkeeper. And this, of course, is the prime requisite of any system of bookkeeping, the providing of accurate records with the least possible effort and expense, for it is quite possible to have a system that is so involved and cumbersome that it will require an office force which will materially increase the expense of doing business.

In the system developed by Mr. McClure, as jobs come in either by telephone or otherwise, they are listed and numbered consecutively in the jobbing book as follows:

No. 792 Install new 30 gal. X H galv. range boiler.
For C. A. Mitchell,
2430 N. 3rd St., City
Ordered by "self."

When the plumber returns to the office after completing a job he makes out a charge sheet showing the number of the job, the person for whom the work was done together with his address, the name and address of the tenant, where the work is done for a renter, the name of the person ordering the work, the date the order was received, the date the work was finished, an itemized list of material, the time required, the names of the workmen, the name of the man in charge, and the expense for carefare, etc.

At the bottom notations are made concerning anything that should be called to the owner's attention, as, for instance, "coil in gas heater in bad condition."

From this charge sheet the bookkeeper makes out the bill using all the information on the sheet with the exception of the plumber's name. The bill is made out in duplicate,

CHARGE NO. 792 — FISHER BROS. & McCLURE — DATE FINISHED 1/4/20

MR. C. A. Mitchell — DATE ENTERED

ADDRESS 2430 N. 3rd St

WORK AT Same — DONE BY John Boyd

IF ON METER — ORDERED BY C.A. Mitchell

REPORT TO WATER DEPT.

NO. OF ITEMS USED	DESCRIBE IN DETAIL WORK DONE AND LIST EACH ITEM OF MATERIAL AND TIME SEPARATELY	THIS SPACE FOR PRICING ONLY
	Installing range boiler	
1	30 gal X H galv. range boiler	
3	¾" Br. boiler couplings	
10'	¾" Br. pipe	
1	¾" Br. service ell	
1	¾" x 2" Br. nipple	
1	¾" Br. union	
1	30 gal boiler stand	
4	hours time "Boyd"	
	Carfare 12¢	

TO THE EMPLOYEE. Describe in this space any matter that should be called to the owner's attention.

Coil in gas heater in bad condition

TOTAL

Amt. Rec'd

Charge Sheet.—Actual Size 7x9 Inches.

the copy being on a larger yellow sheet perforated at the left and numbered consecutively with the original. These sheets are filed by number while the charge sheets are filed chronologically.

At the end of each day each plumber makes out a time card showing the jobs worked on during the day, their order

numbers, the time work was begun and finished, items of expense incurred in connection with a job such as carfare, a statement as to whether the work has been completed and charge made or not, and a description of the work. These time cards are checked against the charge sheets by the bookkeeper and initialed by him.

FISHER BROS. & McCLURE
PLUMBING, HEATING & TINNING
1001-03 CAPITOL STREET

TIME CARD

Date July 6th-1920
Employe John Boyd

OWNER	ORDER NO.	TIME STARTED TO TIME FINISHED	NO. OF HOURS	ITEMS OF EXPENSE	AMOUNT	WORK FINISHED CHARGE MADE	DESCRIBE WORK
C. A. Mitchell	792	8:00-12:00	4	C.f.		12 yes	Installing range boiler
R. M. Johnson	797	1:00-2:00	1	cf		6 yes	Repairing W. C.
J. A. Andreve	801	2:30-4:30	2½			"	Renewing Circulators
R. O. Rankin	809	4:30-5:00	½	cf.		6 "	Repairing kitchen pipe
TOTALS			8			24	CHECKED

Time Card.—Actual Size 8¾x4 Inches.

All money transactions during the day are recorded on a regular form drawer slip which is balanced at the end of each day. These slips are filed chronologically, and at regular intervals the various classes of items are totalled and posted to the ledger. Outside of the check book stubs, these are all the records and books kept by this company. Though this company employes on an average of fifteen men, the bookkeeper takes care of the records, writes the letters, makes out the bills, answers the telephone, waits on customers, does various other little odd jobs, and still has plenty of leisure time.

A bell and speaking tube connects the office with the shop and saves a great many steps in a day. This office is also equipped with modern computing machines, check protectors, filing cabinets, and other devices for the modern, up-to-date office.

Mr. McClure, who worked out the system of accounts, has been chairman of the local association's educational committee which has gotten up several interesting charts. Sometime ago the committee reported, after a careful survey, that a shop will collect on an average seven hours' pay from customers for every eight paid by the shop to the men. On this basis they plotted charts showing the gross percentage of profit made by the shops when charging certain rates

FISHER BROS. & McCLURE
PLUMBING, HEATING & VENTILATING ENGINEERS
TINNING & SHEET METAL WORK
1001-03 CAPITOL STREET

DEPENDABLE SINCE 1891

OUR ORDER NO.	BUYERS ORDER NO.	DATE ENTERED	DATE FINISHED	WHEN REMITTING QUOTE FOLIO NO.
792		7-3-20	7-6-20	

SOLD TO Mr. C.A. Mitchell,
2430 N. 3rd St.,
City.

WORK AT Same

HARRISBURG, PA. JUL 7 - 1920

ITEMS	DESCRIPTION	PRICE	EXTENSION	TOTAL
	Installing range boiler.			
1	30 gal. X.H. galv. range boiler			
8	3-4 inch boiler couplings			
10'	3-4 inch brass pipe			
1	3-4 inch brass service ell			
1	3-4 x 2 inch brass nipple			
1	3-4 inch brass union			
1	30 gal. boiler stand			
4	Hrs. time pl.			
	Note: Coil in gas heater in bad condition			

Bill.—Actual Size 8½x8½ Inches.

WAGE CHART.

Showing Various Rates Per Day and Per Hour, Selling Prices Per Hour, and Gross Profits After Deducting "Lost Time."

—Note—

From carefully kept data it has been found that an average of one hour per day is lost on men working eight (8) hours per day. This loss is due to the "inefficiency of labor," the cost of correcting unsatisfactory work not chargeable to customers, hours or fractions thereof charged to shop for cleaning, repairing tools, etc., etc. Therefore, the following columns showing gross percentage of profit on sale of labor at various amounts per hour are compiled on the basis of realizing a profit on the sale of seven (7) hours with the cost based on eight (8) hours.

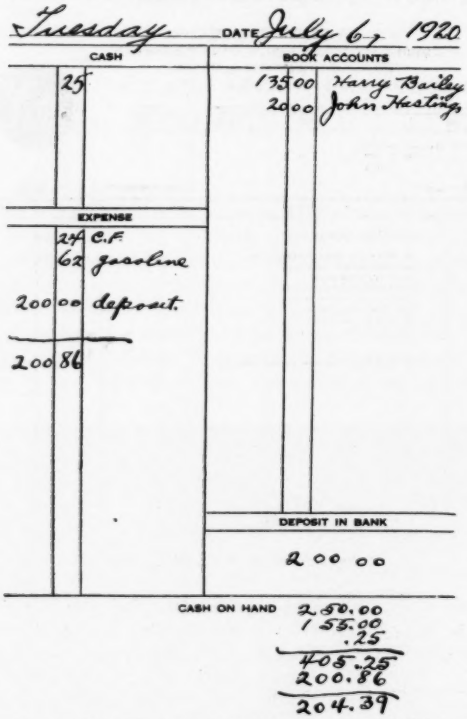
"The "lost hour" should be charged to the "overhead" account and the time should be bought and sold at a rate which will allow a reasonable profit after the business overhead percentage is deducted from gross profits shown in the following table.

Hours Per Day	Paid Per Day	Paid Per Hour, Cents	Time Sold, Cents Per Hr.	Per Cent Gross Profit After Loss of 1 Hr.	Time Sold, Cents Per Hr.	Per Cent Gross Profit After Loss of 1 Hr.	Time Sold, Cents Per Hr.	Per Cent Gross Profit After Loss of 1 Hr.	Time Sold, Cents Per Hr.	Per Cent Gross Profit After Loss of 1 Hr.	Time Sold, Cents Per Hr.	Per Cent Gross Profit After Loss of 1 Hr.
8	$1.60	.20		31.2		53.1		75.		96.8		118.7
8	1.80	.22½	.30	16.6	.35	36.1	.40	55.5	.45	75.	.50	94.4
8	2.00	.25		5.		22.5		40.		57.5		75.
8	2.20	.27½		27.2		43.2		59.1		75.		90.9
8	2.40	.30	.40	17.	.45	31.3	.50	45.9	.55	60.4	.60	75.
8	2.60	.32½		8.		21.1		34.6		48.1		61.5
8	2.80	.35		25.		37.5		50.		62.5		75.
8	3.00	.37½	.50	16.6	.55	28.3	.60	40.	.65	51.7	.70	63.3
8	3.20	.40		9.4		20.2		31.2		42.2		53.1
8	3.40	.42½		23.5		33.8		44.1		54.4		64.7
8	3.60	.45	.60	16.6	.65	26.4	.70	36.1	.75	45.8	.80	55.5
8	3.80	.47½		10.5		19.7		28.8		38.1		47.3
8	4.00	.50		22.5		31.2		40.		48.7		57.5
8	4.20	.52½	.70	16.6	.75	25.	.80	33.3	.85	41.6	.90	50.
8	4.40	.55		11.3		19.		27.3		35.2		43.2
8	4.60	.57½		21.7		29.3		37.		44.5		52.1
8	4.80	.60	.80	16.6	.85	23.9	.90	31.2	.95	38.5	1.00	45.8
8	5.00	.62½		10.7		19.		26.		33.		40.
8	5.20	.65		21.1		27.9		34.6		41.3		48.
8	5.40	.67½	.90	16.6	.95	23.1	1.00	29.6	1.05	36.1	1.10	42.6
8	5.60	.70		12.5		18.6		25.		31.2		37.5
8	5.80	.72½		20.7		26.7		48.		38.8		45.
8	6.00	.75	1.00	16.6	1.05	22.5	1.10	25.	1.15	34.2	1.20	40.
8	6.20	.77½		12.9		18.5		24.2		30.		35.4
8	6.40	.80		20.3		25.7		31.2		36.7		42.
8	6.60	.82½	1.10	16.6	1.15	22.	1.20	27.2	1.25	32.5	1.30	38.
8	6.80	.85		13.2		18.3		23.5		28.7		33.8
8	7.00	.87½		20.		25.		30.		35.		40.
8	7.20	.90	1.20	16.6	1.25	21.5	1.30	26.4	1.35	31.2	1.40	36.1
8	7.40	.92½		13.5		18.2		23.		29.		32.4
8	7.60	.95		19.7		24.3		29.		33.5		38.1
8	7.80	.97½	1.30	16.6	1.35	21.1	1.40	25.6	1.45	30.1	1.50	34.6
8	8.00	1.00		13.7		18.1		22.5		26.9		31.2

This Chart Was Compiled and Presented to the Harrisburg Association of Master Plumbers by its Business Educational Committee, Consisting of H. B. McClure, Chairman; C. W. Fisher, J. W. Bayles, James H. Lutz, Jr., Wm. M. Logan and G. W. Palmer, All of Harrisburg, Pa.

per hour for men who were being paid varying schedules of wages. The chart substantiates the contention that there is little profit in selling labor.

Another chart worked out by this committee is a table for figuring net profits when selling goods at certain percentages



Daily Record of Money Transactions.—Actual Size 6x10 Inches.

above the delivered cost and with certain rates of overhead. At the bottom is a rather comprehensive list of the various items that should be included when figuring overhead expense.

As this is a progressive plumbing and heating firm, Mr. McClure and the other member of the company, Edwin L. Fisher, are active in many organizations including the Rotary Club and Harrisburg Chamber of Commerce. By their work within the association and their activity in civic affairs, they are helping to put the plumbing and heating business where it belongs.

With its 300,000 employes, the Postal Establishment handles 1,700,000 letters an hour. It sells more than 43,000,000 stamps daily to over one hundred million people, a total of 14,000,000,000 stamps sold annually. Besides these, the post office sells 9,000,000 stamped envelopes daily. The annual turnover of the postal establishment is $3,000,000,000, with expenses of nearly $600,000,000. It satisfies debts to the amount of $1,500,000,000 through the sale of 150,000,000 money orders annually. Over 2,500,000,000 parcels are handled annually by the parcel post. The earth could be wrapped around thirty times with the twine we use in tying mail in bundles annually; 800,000 miles of twine is thus used. How would you like to find $55,000 without any claimant? The Dead Letter Office does that every year. The careless public either puts no address on the envelope or only partially addresses it. The Dead Letter office handles 19,000,000 undelivered letters annually. The New York post office alone handles over 250,000 misdirected letters daily, readdressing them from city directories before they can be delivered. It costs the taxpayers millions to correct their own carelessness.

A FOUNTAIN WHICH IS MORE THAN ORNAMENTAL.

Even the fountain, that classic symbol of all that is ornamental, has now been converted to the uses of utility. An American manufacturer recently began the making of a device which he calls a "washfountain."

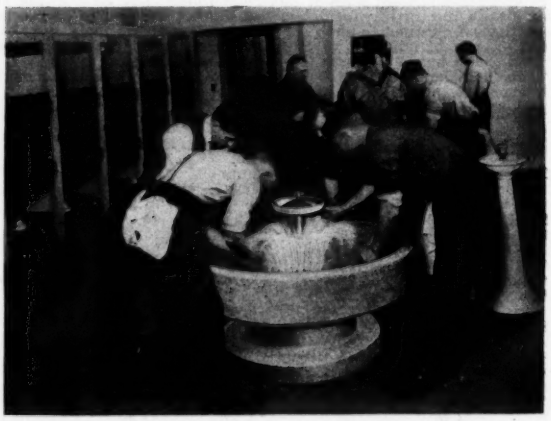
The fountain may be used wherever large wash-rooms are necessary; in factories, schools, public buildings, hotels and

Women Workers Using the "Washfountain."

railway stations—in fact every public or industrial lavatory. It is constructed of "Marmorite," a composition of marble chips and concrete, ground and polished.

The saving in space is considerable, according to the designers, who state that bowls for twenty-four people require a minimum of 91 sq. ft. floor space, while the washfountain accommodates an equal number using only 64 ft.

The fountains are manufactured in two sizes—a 54-inch basin



Washfountains In Use In Men's Washrooms.

to accommodate 12 people, or a smaller, 32-inch, where six people may wash at one time. Due to the circular construction of the fountain there is plenty of "elbow room" for the comfort of the users.

Soap is supplied by a device which is part of the design, and the flow of water is controlled either by a hand valve or a foot lever, as desired.

The greatest advantage claimed for this fixture, other than economy, lies in the sanitary side of the problem. The infection danger is almost entirely removed, according to its advocates.

One architect summed the whole matter up by saying, "It is collective washing individualized."

WASTE *of* WATER THROUGH DEFECTIVE PLUMBING*

By Fred A. Schossow

SOME surprising facts have been brought to light in a report entitled "The Waste of Water in Detroit," by George H. Fenkell, general manager of the Detroit Board of Water Commissioners. This report is based upon investigations that have been made by the Pitometer company, a private corporation that was engaged by the water commissioners to locate and stop the waste of water in Detroit. Many leaks were located in the water mains, the stopping of which prevented the waste of millions of gallons per day, which had been running into the sewers, with no surface indication that water was being wasted.

The work of this company also included making a house to house inspection of meters and plumbing fixtures, to ascertain how many fixtures were leaking and how much water was thereby going to waste.

The average householder who is confronted with a large water bill frequently assumes that the water meter is registering too high. Often, it is believed that sprinkling the lawn consumes a great deal of water or that a great waste is due to allowing the tap to run to prevent the plumbing from freezing. Here, then, are the facts. The daily average of water used in Detroit for each of these purposes is as follows:

To Prevent Pipes from Freezing	750,000 Gallons per Day
For Sprinkling Lawns and the Like	900,000 Gallons per Day
Defective Plumbing Fixtures	23,000,000 Gallons per Day

The investigations of the Pitometer company resulted in the discovery of 17,597 leaking plumbing fixtures where the leak was sufficiently great to record on the water meter.

This was in territory totaling 80 per cent of the population of Detroit, and it is assumed that 10 per cent of leaks in this territory remained undiscovered, from various causes. Therefore, in the whole of Detroit, it is assumed that there are about 25,000 leaking plumbing fixtures.

Another starting fact is that the average leaking plumbing fixture wastes 977 gallons of water per day. This fact was ascertained by measuring the rate of flow for over 4,000 fixtures. An examination of their inspectors' reports indicates that a leak of 1/10th of cu. ft. of water per minute is common. This equals 144 cu. ft. per day, amounting to 1,008 gallons and, at the lowest metered rate for domestic use, adds at least 5 cents per day to the water bill which means $4.50 per quarter, or $18.00 per year. Larger leaks than above described are not at all rare, even in the better residential districts.

We now begin to understand why water boards generally receive so many complaints regarding high water bills. Rate payers in Detroit, for example, pay for a waste that approximates 8,000,000,000 gallons per year, an amount of water that weighs 34,000,000 tons.

The Water Department of Battle Creek issues a leaflet to rate payers, giving the following information:

Leak through opening of	Gallons per day	Gallons per month	Cost per month at meter rates
¾-inch	12,000	360,000	$18.00
½-inch	8,000	240,000	13.00
⅜-inch	4,000	120,000	8.00
⅛-inch	1,000	30,000	2.40
1/16-inch	400	12,000	1.00

*By courtesy of "The Michigan Architect and Engineer."

The conclusions of the Battle Creek water department are quite similar to those of the great majority of water departments. It is a well established fact that it is water closets that waste most of the water. A moment's reflection will serve to confirm this fact. Almost all other fixtures, such as bath tubs, lavatories, sinks, laundry tubs, etc., are equipped with faucets that are in plain sight, and where the drip is visually perceptible, but this is not true of the water closet. Here, a leak may occur without the least splashing of water, and with some types of bowls, it is unseen even if the valve has failed entirely to close. Hence, a leak often attains considerable proportions before it is noticed, or before the noise of running water evidences the fact that repairs are necessary. Authorities consulted agree that of all plumbing, water closets give 90 per cent of the trouble.

The question naturally arises, why is it that in this age of high efficiency in other lines, inefficient water closets seem to be the rule, rather than the exception. The answer is, that the average householder makes no effort to acquaint himself with the mechanism of water closets. All closet bowls look alike to him, and it is difficult to make him understand why some are more efficient than others. The "workings" of the tank are a deep, dark mystery, and the whole subject is distasteful. He may learn to tinker with his automobile, may know something of the electrical equipment of his residence, be able to subdue a refractory lock, or make the screens fit, but, should something go wrong with the water closet, this is usually endured as long as possible and accepted as a necessary evil. Valves are allowed to cut out that might often be saved by the "stitch in time."

And because the householder knows nothing about the relative efficiency of differing types of closets, the kind that he buys with greatest readiness is that sold at the lowest first cost, which is the sort that is known to the trade as the "competition closet." This type is manufactured and sold for the simple reason that it is as cheap as anything the other fellow has to offer. It is first cousin to the dollar watch, the 69-cent razor, and the 15-cent suspenders.

It is hardly possible to give too much attention to the selection of the water closets for even the most modest home, bearing always in mind that the efficiency of the closet depends very largely upon the type of flushing mechanism selected. Otherwise, waste of water, insanitary conditions and possible ill health may easily be the result. The Battle Creek water department states that some types of flushing mechanism are not fit to use. On the contrary, other types have proved their efficiency through years of successful use. No closet should be selected because the first cost is low. Neither should another be selected because it has a pleasing exterior appearance, or is beautifully illustrated.

There seems to be no good reason why closets should continue to be selected that cause the water meter to operate continually, day and night, as is now known to be the case. Rather, the water used should be confined to that actually required to flush the bowl thoroughly—no more, and no less.

GETTING OUT *of the* DOLDRUMS

Ways and Means to Liven Up a Dull Season

By Robert A. Hardy

THE ancient mariners feared those places of calms and baffling winds near the equator, known as the "doldrums." Sailing vessels often beat about for weeks in the doldrums without making any progress. Sometimes vessels were pulled out of these waters by many strong pairs of oars.

Hence the word "doldrums" has come to be a synonym for inactivity or inertia. This year many businesses have experienced the doldrums of lack of buying interest on the part of the public. The usual summer inactivity was made quieter still by the general feeling on the part of the consumer that the past summer was not the time to buy.

Every retailer knows this condition which has prevailed for some time. But, just as strong arms and stout pairs of oars pulled the old time sailing craft out of the doldrums, new and striking advertising and selling plans may pull a merchandising plumbing business out of the rut caused by postponement of buying.

What nine out of ten dealers, whether they sell paints or pins, need most of all is not additional capital or better equipment. The most urgent needs of the average store is new merchandising ideas, that will catch the public's attention, that will make people stop and look, that will open the pocketbooks. Better merchandising is the problem which confronts the retailer today.

Merchandising these days is a much used and abused word. In the selling and advertising business men often talk about merchandising with an air of mystery. It is supposed to be something new, something strange, something wonderful. The real meaning of merchandising is simple enough. It means to buy and sell—at a profit of course. Good merchandising, therefore, means careful buying, convincing advertising, effective display, intelligent salesmanship.

So when an advertising man talks generally about the need for better merchandising it is not as vague as it may sound. Let us examine some of the elements of merchandising. Most dealers are not troubled now by a buying problem. It is easier to get merchandise than it was some months ago. What concerns every dealer is selling—turning his stock quickly into profits.

The first fundamental in our selling problem is advertising, which is nothing more or less than selling to large groups of people through the printed word.

Examine your advertising, if you can, from the standpoint of a disinterested third party. Is it interesting? Does it compel attention? Would you stop and read it if it belonged to some one else? If you cannot give a decided affirmative to each of these questions, can you blame the public for not being interested and for not wanting to buy?

We run across frequent examples of retail advertising which is about as attractive in appearance and as full of human interest and personality as an announcement of a sheriff's sale or a notice from the collector of internal revenue. These are the dealers who tell the truth when they say, "Advertising does not pay us."

To help pull your business out of the doldrums your advertising must be interesting. Tell something about your goods that people did not know before. Tell them about new products for winter comfort and convenience. Tell new uses for old products. Tell new reasons for buying old products. If you make your advertising interesting enough it will be read. And getting it read is the first thing that the advertising man has to worry about.

In making your advertising more interesting, here's a hint that may help many a man who writes retail advertising. The average person responds to an idea which comes within his own experience. The most talked about novel of the year is written about common folks. It narrates the every day life of a small town. Readers by the thousands find a picture they understand and appreciate, because it is within their own vision and experience.

Link up your reasons for buying with local conditions and local events. If you make use of the manufacturer's ready prepared advertisements add a few lines of your own to give a more personal appeal. Make your advertisement as sound as if you were talking to a customer across the counter. It frequently happens that a man who has a fluent line of selling talk will try to write an advertisement. The advertisement appears clumsy, awkward and uninteresting. The writer has made so much of an effort that he has forgotten to be natural. He did not write as he might have talked. If your advertising can reflect the personality of your store to people who already know you it is more likely to draw a response.

Select for advertising the things that people want to buy. Give prices in your advertising, not necessarily cut prices. Prices let people know that the article is within the range of their buying power.

There are great numbers of people who can buy now if they really want to. The theaters are drawing crowds as usual. The movies are packed. It's when it comes to going into a store and paying down money for merchandise that the public hesitates. Stimulate a real desire and the "consumers' strike" will vanish in many quarters.

Give a thought to new and distinctive selling ideas. Take for instance, a prominent manufacturer who suggested that hardware dealers run a contest offering prizes for the nearest correct guess on the number of saw teeth in the saws in their window displays. Here was one novel idea which directed the attention of the public to the store, and which could be used by the dealer in other retailing lines.

One-cent sales are used extensively in the drug field to stimulate trade during a dull season. There is no reason why the idea of a one-cent sale could not be adapted in some form in several other lines. Dollar days in many communities have awakened trade. A number of articles or groups of articles each at the popular price of one dollar seems to be a compelling attraction.

When you have decided on a new selling effort of this kind, plan it carefully in advance. Go the limit in advertising it. Then if it fails it will not be on account of too weak

support. If the idea is a practical one it is not likely to fail. A public often takes readily to something a little out of the ordinary.

Every store has lines which are considered seasonable. Possibly the season normally extends for only one or two months. The volume of business could be enormously increased if only the season could be lengthened. Sometimes it is discovered that out-of-season goods are not as out-of-season as they were once considered, as for example the wearing of furs in midsummer.

In many lines the seasons have been lengthened. A large tire company found that less than half of its sales of tires were made in the three months during the height of the season. Toys were once sold by the average store only during a few weeks at Christmas time. Now they have become a year-round line in many stores. These are but typical examples. Look over your store and see if there are not several lines whose selling seasons could not be materially extended by a little aggressive merchandising.

Going after prospects systematically is another way to liven business during the dull season. Keep a record of prospective buyers of any merchandise where the unit purchase is large enough to warrant it. Small cards or pads of slips are convenient for this purpose. Each salesman should have a supply of these cards in his pocket at all times. See that cards are filled out giving the name and address of the prospects, the merchandise they are interested in and the probable dates they are likely to purchase.

Prospect cards are filed by dates in a "tickler" file. At the time indicated, when the purchase is likely to be made, the prospects are sent letters or given personal calls. A well-organized follow-up system for interested prospects is a way of making sure that no possible business is overlooked.

During a dull season salesmen often have to be stimulated to greater effort. Some salesmen will make many sales of low profit staples and neglect to push the seasonable specialties because they require more selling effort. Some chain stores find it worth while to appeal to the clerk's self-interest to make an effort to sell the lines in which are more profits. The staples will take care of themselves. We need more effort on the goods that are hard to sell.

A bonus on sales of certain slow moving lines has been offered by various retail establishments and has inspired clerks to activities which moved the stocks in a short time. Instead of a bonus on sales of certain merchandise, the bonus may be given for an increase of sales in a dull month, a week or two or three of the dullest days of the week. Care should be taken not to overdo any such feature or the clerks may be so anxious to increase their sales that they will antagonize customers by over-solicitation.

Other large stores build business during a dull season, as well as at other times, by training salespeople to push allied or related lines. Each clerk is given a list of the specials and alongside each special is a parallel list of other goods that are to be suggested to the customer. A customer is never allowed to leave the store without being reminded of other items that are closely allied with what he has just purchased. Thus in very many cases one purchase leads to another, although the customer may have entered the store with only one purchase in mind.

Perhaps your slow season's business can be livened up by demonstrations in a few lines. The public does not always accept a new product without question. It wants to be shown. In some of these cases it is time for the demonstrator to get to work. Rightly conducted the demonstration has proved an effective way of building sales. When sales come hard investigate and see if the public fully understands the value of the merchandise. A demonstration may accomplish results.

Occasionally worded showcards in your window displays or inside the store attract attention. Attractive showcards and price tickets can be lettered with a little practice and should not be overlooked when extra stimulants are needed. Yet there are many window displays that are losing some of their effectiveness because they lack price tickets on the goods.

The public has not stopped buying. It depends on how closely a store comes to centering that consumer's wants. The success in any kind of retailing consists in finding out a definite need, being able to fill it and letting the public know that you are ready to serve them. The merchant that can do this effectively will get out of the doldrums of a dull season.

Tin in China and the Malay States.

A Chinese Government report on the trade of Mengtsz last year gives the export as 10,868 tons, as compared with 8,332 tons in the previous year. No estimate is attempted of the output from the mines. Owing to the high silver prices there were no sales of stock from Hong Kong during the first half of the year, the accumulation in June being valued at $10,000,000. Subsequently variable shipments (regarded as speculative) were known to have taken place to America, and in December it was estimated that the supplies in Hong Kong were about the recognized proportion. Nothing, however, is said as to any accumulation of tin in Yunan itself, such as has been rumored, through the paralysis of the trade. China itself imported 2,908 tons from Hong Kong during the year, of which the bulk went to Ningpo. The Provincial authorities are reported to have engaged two "American tin experts" to standardize the Yunan Tin Co.'s production, as American buyers realize that it is cheaper to buy from Kokiu direct than from Hong Kong houses, and certified analyses have not been previously available for parcels shipped from Kokiu. What lies behind these statements is obscure, but it seems to suggest an attempt by American interests to compete with the old-established methods of trade which united the Chinese interests, which refined the tin in Hong Kong, and probably to a large extent financed the industry with the guilds in Yunan, who operated the mines and transport.

According to the "Straits Budget," production of tin in the Malay States will in the new year again be considerably reduced. The extract given below is a reply made by the Government at a meeting of the Legislative Assembly of the Federated Malay States and foreshadows the complete closing of many of the hydraulic tin mines that are not in a position to carry out the erection of bunds, dams, or dumps to prevent the blocking of the Malayan rivers, which the Government intends to stop.

Tin miners who are using monitors (that is to say, water under pressure) for hydraulicing tin deposits, and who are allowing the solid matter to find its way to streams or rivers have been formally notified by the Mines Department that their water licenses will not be renewed when they expire at the end of the current year. If any scheme for the retention of solids is put forward, it will, of course, receive favorable consideration. There is no interference with monitors on mines in which the arrangement for the retention of solids are satisfactory. The lampan system of mining is ground sluicing or hydraulicing with water which is not under pressure. The lampan miners who are allowing the solid matter from their mine to find its way to streams or rivers will, at an early date, be notified by the Mines Department either that their lampan licenses will not be renewed when they expire at the end of the present Chinese year, or else that the renewal of the license will depend upon a satisfactory scheme being put forward for the retention of the tailings.

LEGAL QUESTIONNAIRE

*How Soon Am I to Take Action on Plumbing and Heating Contracts in Missouri in Order to Establish a Mechanic's Lien? —This Question is Answered in a Most Careful Manner**

By "The Judge"

When and How to Perfect Right to Mechanic's Lien Under the Missouri Laws.

Editor, "Domestic Engineering":—Will you please let me know within what time action has to be taken on plumbing and heating contracts in Missouri in order to establish a mechanic's lien? Also, can we have a lien for jobbing, in Missouri?

Missouri. C. B. L.

Answer:—It is provided by Revised Statutes of Missouri, 1909, Chapter 74, Section 8217, as follows: "It shall be the duty of every original contractor within *six months,* and every journeyman and day labor, within *sixty days,* and every other person seeking to obtain the benefit of the provisions of this article within *four months,* after the indebtedness shall have accrued, to file with the clerk of the circuit court of the proper county a just and true account of the demand due him or them after all just credits have been given, which is to be a lien upon such building or other improvements, and a true description of the property or so near as to identify the same, upon which the lien is intended to apply, with the name of the owner or contractor, or both, if known to the person filing the lien, which shall, in all cases, be vertified by the oath of himself or some credible person for him."

From the above it appears that the time within which a claim of lien in the nature of an account, must be filed, varies according to the relation of the person claiming the lien to the owner of the property. The best way is always the safest way, and therefore if you wish to claim a lien you should take the proper steps immediately, and not wait even for the sixty-day period to run.

The word "accrued" in the statute has been construed not to mean "due," but means that the period begins to run from the time the last labor was performed or materials furnished. The limitation does not begin to run until the last item called for by the contract is furnished or the last work under it is done. It is important to remember that if several items are furnished under one contract, the contractor may file his lien within the statutory period after the date of the last item, but if the materials are furnished under different, distinct contracts, the lien must be filed under each contract within the time limited. Where the parties intended the items to be included in one account, the entire account will be treated as a continuing and connected transaction, and the lien limitation will begin to run from the last item of account even though a considerable period may elapse between the concluding items.

The time within which a mechanic's lien may be filed cannot be extended by agreement. Where a contractor had completed a building which had been accepted by the owner, a subcontractor who afterwards does painting and other work is bound to take notice that the house had been completed, and is not entitled to a lien under the contract. This is so because the sub-contractor's rights are bound up with those of the general contractor. If the sub-contractor had been in direct communication and had received orders from the owner direct, for the work, he would then have been an original contractor and therefore entitled to enforce his lien. A sub-contractor must file his lien within four months after the indebtedness accrues. A lien account filed by a party who was not a day laborer nor a journeyman after the expiration of thirty days and within four months after the debt accrued, has been held to be entitled to a lien, although it blended items for labor with those for materials furnished.

Where all the items of an account, except the few last ones, were supplied under one contract, and the transaction was closed, the time for filing a lien cannot be extended by furnishing on a new request additional articles and adding them to the completed account.

The account is the foundation of the suit which must be brought later, and which I shall discuss further on. It is such a statement of the claim as fairly apprises the owner and the public of the nature and amount of the demand which is asserted. If a lien account has been filed which is defective for any reason, the person claiming the lien may file another lien account remedying the defect, provided the second account is filed within the time allowed by law. In that part of the section, which I have quoted above, providing that the lienor shall give "the name of the owner or contractor," the original contractor is meant.

If the account is honestly stated, errors arising from mere mistake will not defeat the lien for what is justly due. That a lien account is not theoretically or artistically correct does not necessarily affect its sufficiency as a just and true account. but it must be remembered that not all mistakes in accounts will be overlooked by the courts in determining whether they are just and true. For instance, if you made a mistake and claimed $1,000 due you, when $2,000 was the true amount, you could not make your claim good for more than $1,000. It is necessary that the character of the work or materials furnished be stated in the lien account or that it be somewhere found in the papers filed. It would not be sufficient simply to file a claim for certain sums of money due on certain dates, in the nature of a monthly statement, without showing what the money was due for. Although a large part of the items of the lien account are not dated, yet where the affidavit accompanying the account states that the demand accrued within four months prior to the filing of the lien, it is sufficient. A statement which does not show even the aggregate of the different items, or the aggregate of the credits on account of work, but simply sets down in a round sum the balance claimed as due, is not sufficient.

Remember also that where you have furnished materials and

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*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the Very Nature of the Service, which is rendered without a personal interview.—Editor.

have also furnished labor, particularly on small jobs where you might be held to be a journeyman or laborer, the account may be good as to part and bad as to part, depending upon when it was filed.

"The lien for work and materials furnished shall be preferred to all other encumbrances which may be attached to or upon such buildings, bridges or other improvements, or the ground, or either of them, subsequent to the commencement of such buildings or improvements," is the wording of the statute regarding to priority of liens over other encumbrances.

Section 8228 of the Revised Statutes of 1909 then provides for further action on the part of the person endeavoring to perfect his lien claim as follows: "All actions under this article shall be commenced *within ninety days after filing the lien,* and prosecuted without unnecessary delay to final judgment; and no lien shall continue to exist, by virtue of the provisions of this article, for more than ninety days after the lien shall be filed, unless within that time an action shall be instituted thereon. . . ." An important fact in this connection is the rule that suit must be brought against *all the necessary parties* within ninety days after the filing of the lien account or the rights to a lien are barred. It has been held that where a sub-contractor failed to make the original contractor a party to the suit against the owner to enforce the lien, the sub-contractor cannot bring the original contractor in after the ninety days.

It is further provided by your statutes that "Every person except the original contractor, who may wish to avail himself of the benefit of the provisions of this article, shall give ten days' notice before the filing of the lien, as herein required, to the owner, owners or agent, or either of them, that he holds a claim against such building or improvement, setting forth the amount and from whom the same is due. Such notice may be served by any officer authorized by law to serve process in civil actions, or by any person who would be a competent witness. When served by an officer, his official return indorsed thereon shall be proof thereof, and when served by any other person, the fact of such service shall be verified by affidavit of the person so serving."

The object of such a notice as provided above is to warn the property owner against paying the original contractor while outstanding claims exist in favor of laborers and materialmen.

In another section it is provided that where other persons than the original contractor file liens, it is the duty of the contractor to defend the suit at his own expense and the owner is entitled to withhold from the original contractor the amount claimed under the lien. This is obviously because the contractor owes the money to some sub-contractor or employee of his own, and it is really his debt which is being litigated.

It would seem that you have a right to a lien for jobbing work. The statute says, in this respect: "Every mechanic and other person, who shall do or perform any work or labor upon, or furnish any material, fixtures, engine, boiler or machinery for, any building, erection or improvements upon land, or *for repairing the same,* under or by virtue of any contract with the owner or proprietor thereof, or his agent, trustee, contractor or sub-contractor, upon complying with the provisions of this article, shall have for his work or labor done, or materials, fixtures, engine, boiler or machinery furnished, a lien upon such building, erection or improvements, and upon the land belonging to such owner or proprietor on which the same are situated, to the extent of one acre. . . ."

It is apparent that the contract must be with the owner or his orignal contractor or sub-contractor. This is important in some jobbing cases, for many times you may be ordered to do the work by a tenant. In such a situation in order to have a lien against the property it would be necessary for you to show that the owner authorized you to do the work in some way.

The statute specifically mentions "repairs" as work which will entitle the mechanic or contractor to a lien. Alteration work would also undoubtedly come within the terms of the statute and give you a right to a lien.

One thing must be kept in mind, however, and that is, that the work done or materials furnished, must be in connection with the real estate or the buildings thereon. If you should be called into a factory, for instance, to do work upon some process machinery which had been installed in the factory, but which was a part of the business carried on there and not really a part of the building itself or its normal equipment as a factory, you might not have a lien, depending upon the facts in each case.

The above statements of the law are based upon the statutes which have been enacted in Missouri up to but not including the legislation which may have been passed this year by your legislature, as I have not had access to the 1921 laws and did not want to delay my answer until I have seen them. It is probable that no material changes have been made in the law.

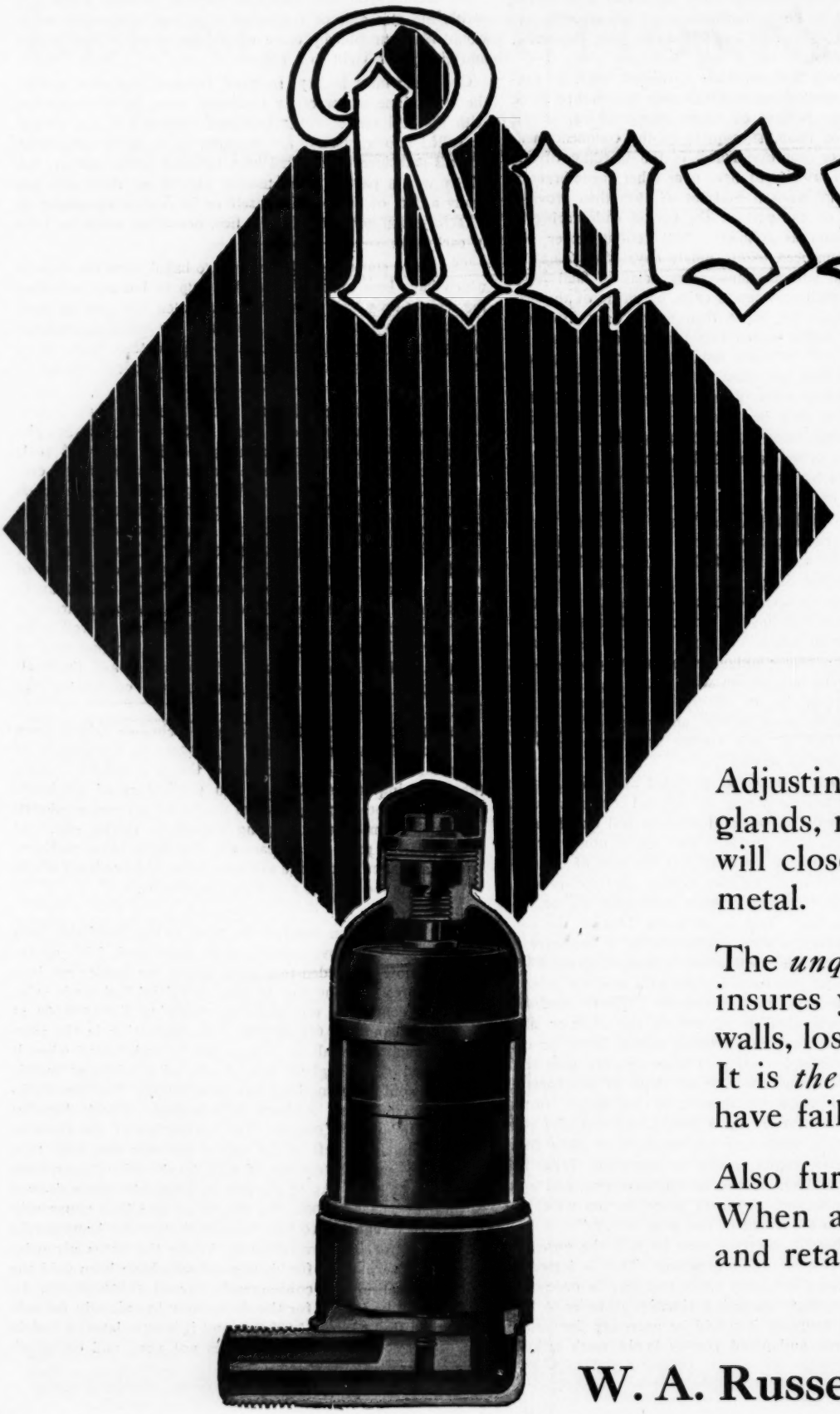
New Schedule for Manufacturers.

Director of the Census William M. Steuart has issued the general schedule for manufactures for the census of 1921, which was prepared in co-operation with the committee created at the July conference in Washington of trade and craft associations with Secretary of Commerce Herbert Hoover and officials of the census bureau. The schedule carries several revisions of the tentative schedule which had been sent out for study by manufacturers through the committee of trade and crafts organizations, of which Attorney Nathan B. Williams of the National Association of Manufacturers is chairman, and adopted changes suggested by it as well as by Secretary Hoover. Among the changes is the inclusion of the total salaries paid to "salaried employes" and the total wages paid to "wage earners," which the committee had sought.

Because of its simplicity, the new schedule differs from past schedules and also varies with regard to the amount of information called for. As outlined, the new schedule covers the following items: Names and particulars of establishments as to location and lines of products; persons employed as salaried employes, including managers, clerks, etc., and total salaries paid; wage earners, including piece workers, and total wages paid; time and operation and products which will be detailed for the particular industries.

War materials on hand at the time of the Armistice have been an asset of governments to be liquidated. This operation has now proceeded to a point where the results run into large figures. To the end of June, England had made sales of 88 per cent of its war materials, realizing £582,000,000, at par of exchange, $2,670,000,000. The depression in the market for such materials as copper can be understood when it is noticed that England had stocks of nonferrous metals which it sold for something like $200,000,000. Textiles, leather, and equipment realized $150,000,000. Food supplies brought in only $35,000,000. The realization of our Government from assets left at the end of the war now runs to a handsome sum. Statements of sales by the War Department alone are at hand. As of the first of September they showed a total of $1,456,000,000. To this is to be added apparently $822,923,000 reported to have been sold from the Army stocks abroad to foreign governments. When the notes given by foreign governments for their purchases have been paid the total realization will consequently exceed $2,250,000,000. In fact, it will be larger, for the Army now has already for sale materials that cost $145,000,000, and it is sure later to find in its possession other goods it does not need and on which something can be realized.

Russell



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The *unqualified guarante* tha
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walls, loss of time, money and
It is *the* valve for every steam
have failed.

Also furnished with vacuum a
When attached to tightly con
and retain heat after fire is ba

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USSELL Valves have been leaders since 1890. Many of them installed in those days are still in service. The RUSSELL has a world-wide eputation as the one valve that is absolutely dependable under every nown heating condition.

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Descriptive literature sent on request.

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332 South Michigan Avenue - - - - - Chicago, Ill.

BANKER CALLS ATTENTION TO GREAT BUYING POWER OF FARMER.

"Yes, 1921 has been generous with the farmer," says J. R. Burrows, president of the Central National Bank, Topeka, Kans., in a circular being sent out by the Capper Farm Press. Mr. Burrows, who spent his early life on the farm, was secretary of state for Kansas before forming his present bank connection and is in an excellent position to know the farmers' problems and financial condition. His statements regarding the farmer's buying power and his advice concerning how to sell to them is well worth consideration from the various branches of the plumbing and heating industry. The banker's statement in full follows:

Kansas is better off today financially than it was two years ago.

Those who watched the big slump in orders a year ago, coupled with talk of a buyer's strike may not take this statement without some degree of mental reservation.

But it's true in Kansas without a question of a doubt. In this declaration I am corrobrated by others, not necessarily bankers, although I'm inclined to believe that as a class we are able to get in closer touch with the business pulse of the state than any others. When the farmer wants to buy a new truck or tractor, build a new house, or install a lighting plant in the basement, he comes to his banker. When he desires to buy the adjoining quarter section of land, he asks his banker's advice. Then again when crops are poor and he hasn't enough money to pay the interest on the mortgage, he calls on us for assistance.

I'm not in as close touch with other states of the Midwest as I am with Kansas, but off-hand I'd say those bordering on our commonwealth are about in the same general condition. They are as sound as the proverbial dollar.

Perhaps it would not be amiss to go into considerable detail as to why I know Kansas is better off financially than it was two years ago, which is the time generally recognized as the period when prosperity reached its peak.

The farmers have raised immense crops this year. A trip across the state will remove the last shadow of a doubt as to my statement that crops are excellent. All over Kansas wheat has been unusually good. In fact we have the fourth largest wheat crop in the state's history. Nothing except an absolutely unheard of and wholly improbable calamity can keep the farmers from husking a record crop of corn. Save a small area in Dickinson and surrounding counties, it never appeared better for a record in production. Although the first cutting of alfalfa generally was ruined by wet and cold weather and cut worms, the succeeding crops have been large enough to make up for the loss of the first.

Yes, 1921 has been mighty generous with the farmers.

But probably the main factor in causing the statement that Kansas is better off financially than it was two years ago, is that the farmers are over their period of insanity. I'm aware that the use of the word "insanity" may jar many, but it's the only word to use that describes the actual state of mind of the farmers when they saw their 1920 crop values go glimmering. Now they have watched every other line of business suffer as much or more than they did and they feel better. They are right down on the job now, saner, and working harder than ever.

Doubtless it may seem hard to gather any connection between such remarks and my preamble that the farmers are better off financially than for a number of years.

It's simply this: They are over their "insanity." They have come down to rock bottom with a thud. They have come out again in fine shape. But it's going to take more than one or two years of bumper crops to induce them to buy extravagantly.

Don't misinterpret my remarks to mean that the agricultural communities are not going to buy—they are bound to be heavy purchasers as they always have been. But mark my word, these purchases are going to be made more carefully than they have been previously. Price and quality will be considered first.

Now I'm not a manufacturer nor a salesman and it is likely any prediction that I make relative to salesmanship will be "swallowed" with the proverbial grain of salt. But I do believe that it's going to take a higher class of salesmanship in the future than at any time since the great war began. The farmers will have to be shown why they need certain lines of merchandise. I think the great merchandising slogan "1921 Will Reward Fighters" should be amended to read "1921 Will Reward *Only* Fighters." You manufacturers must get out and dig for business as never before.

Beyond the question of a doubt, the farmers are rapidly liquidating their debts to the banks. This is noticeable at this institution and others with which I'm connected. In fact, many banks in the western part of the state are sending their money east for reinvestment. They have more than they actually need in their current business.

It is also surprising to note that the number of loans asked for at present is lower than at the corresponding time in other years. I attribute this to my original statement that the farmer is buying less liberally and that he has more than enough income to meet his current needs.

It is realized that the banker is blamed by a lot of business interests for the arbitrary stand he took last fall in refusing to lend money to finance certain well known industries. In all fairness to the banker, a word should be said in his behalf.

He simply had to take this stand or the country would have literally gone to the dogs. Even then the picture of the banker was painted a whole lot blacker than the actual situation warranted. There never was a time in most Kansas banks where the actual legitimate needs of the farmer and business man were not taken care of. Furthermore, too much credit can not be given to the Federal Reserve Banks. Had it not been for these institutions we would have had failures galore. I've been through several panics. We never had anything in years gone by compared to what we would have had if it had not been for the Federal Reserve System.

The results of the past year drew the bankers and farmers closer together and I think the farmer appreciates how the two classes should work together in the closest co-operation.

Personally I've had many farmers tell me they were glad I turned them down on requests for loans last fall, as events have since proved that their prospective ventures would have involved a big loss.

Would I as a banker feel any differently about financing the average farmer to buy material and labor for new buildings than I would at any previous time?

No, buildings are always good investments, and if I felt the farmer was going ahead he could get the money. I have often said—75 per cent of the farmers are in fine shape, 15 per cent are a little slow, and 10 per cent are poor. But this isn't any different than it has been during any previous year. There is always a 10 per cent that is hard up.

Would I feel any differently today as compared with any previous date about financing a farmer to buy a lighting plant, implements, machinery, dairy equipment, fencing, an automobile, etc.?

No, the situation is no different than it has been at any previous time, just as I said before.

Kansas is in an extremely healthy condition. Her banks are in a healthy condition, too. Seventy-five per cent you might say, are in Class A or super-excellent. Fifteen per cent are in fine condition and ten per cent are having hard sledding. I don't think there will be any casualties. It simply means they will have to be careful—that's all.

Exchanging Ideas is the Foundation of Progress

What Associations Are Doing

Through United Effort the Individual Succeeds

Trade Extension Meetings in New England.

Zone meeting of Master Plumbers' Associations have been held in several cities in Massachusetts and Maine during the past three weeks with William J. Woolley, secretary-manager of the National Trade Extension Bureau, and Daniel L. Hanson, the New England Field agent, as the principal speakers. In addition to the meetings in Salem and Boston, previously reported in these columns, Mr. Woolley and Mr. Hanson have addressed gatherings at Lowell and Worcester, Mass., and Mr. Hanson at Leominster, Mass., and Portland and Augusta, Me.

The meeting at Lowell was held in the high school building on Wednesday evening, October 5. Daniel Carroll, president of the Lowell Association, presided, and master plumbers from that city, Haverhill, Lawrence, Andover and elsewhere in the vicinity were guests. Mr. Woolley urged his hearers to use the word "service" on their bills rather than "labor," It always riles a customer to find a charge for labor at a dollar an hour—to say nothing of a higher price—on his bill. Service is the proper word anyway, Mr. Woolley contended, for it represents the actual handicraft of the mechanic plus the master plumber's knowledge. Mr. Hanson spoke briefly on the part the officewoman can have in salesmanship, instancing two or three concrete cases in New England.

On Thursday evening, October 6th, Mr. Woolley and Mr. Hanson addressed a meeting of Worcester county master plumbers in Red Men's Hall, Worcester. Trade Extension Bureau charts were used by Mr. Woolley to illustrate his remarks. He asserted that "hap-hazard" shops generally miss possibilities entirely and eventually get down to where it is a price problem entirely—good will and prestige never having been established. Mr. Hanson in his talk used the story of the train, which seems to be going ahead simply because its neighbor on the next track is moving backwards, to illustrate his point that believing oneself to be going ahead doesn't always indicate that such is the fact.

An experience meeting in which testimony was given by a number of master plumbers was a feature of the gathering at the Chamber of Commerce at Leominster a few evenings later at which Mr. Hanson was the speaker. This meeting was presided over by Charles Smith and was attended by masters from Clinton, the "one hundred per cent show window town," and other surrounding communities. All of the testimonials told of the advantages which had been gained by business building as opposed to simply waiting. Mr. Hanson discussed business conditions generally and touched on the results to be obtained from show windows, sales rooms, sales letters, "every employe a salesperson," and other trade extension topics.

The invasion of the Pine Tree state opened on Monday evening, October 10th, when a meeting was held under the auspices of the Portland Master Plumbers' Association with President Ernest Wheeler in the chair. Visitors were present from a number of surrounding towns and members of the press were welcomed. Mr. Hanson made a close-up analysis of business conditions in Portland, where 18 new shops recently have been opened as a result of a strike. The need of more effort, more salesmanship, more advertising and more hustling all around was urged. "Your established concerns," Mr. Hanson said, "are still miles ahead. Your good will and prestige is worth a lot to you. Tell your customers and the public about it in a community advertisement."

The meeting at Augusta, Me., held in the Chamber of Commerce Hall, was not confined to plumbers, and there were a number of persons outside the industry present, newspapermen included. By means of blackboard illustrations Mr. Hanson sought to show that there was no money made on labor charges, it all being eaten up by overhead expenses. He also referred to the government welfare chart showing that the life of the baby is bound up absolutely with the sanitary conditions of the environment. Of 100 babies born in homes equipped with sanitary plumbing, the charts showed, 97 lived to reach the age of five years, while in homes without modern conveniences only 80 survived. "Give the baby a chance," Mr. Hanson urged. "Let us play fair with the newcomer even before he comes."

November 7-12, 1921.—The third annual convention and exhibition of the American Gas Association, at the Congress and Auditorium Hotels, Chicago.

November 30 and December 1, 2 and 3, 1921.—The twelfth annual convention of the National Association of Practical Refrigerating Engineers, at the Hotel Lorraine, Philadelphia, Pa.

February 14, 15 and 16, 1922.—The annual convention of the Ohio State Association of Master Plumbers, at Canton, Ohio.

March 13, 14 and 15, 1922.—The annual convention of the Indiana Society of Sanitary Engineers to be held at Indianapolis.

Preparations to meet the railroad strike, if it arises, with fleets of motor trucks for bringing in food and fuel supplies are being made by the Motor Truck Owners' Association of New York, according to T. D. Pratt, General Manager of the organization. He said this week that the association was registering all idle trucks in the metropolitan district and would be ready to send out a large fleet on a day's notice. It was estimated by Mr. Pratt that there were between 10,000 and 15,000 idle trucks in the district. He said that in the event of a strike by local teamsters there would be no difficulty in getting a sufficient number of men with driving experience to handle the trucks.

AMONG THE WHOLESALERS AND MANUFACTURERS

E. C. GARRITY ELECTED PRESIDENT OF THE CENTRAL SUPPLY ASSOCIATION.

A tone of genuine optimism pervaded the gathering in the Hotel Sherman, Chicago, on Wednesday, October 26th, as the Central Supply Association held its twenty-seventh annual meeting. Reports indicated that business is steadily improving at a rate which should soon bring the building industry back to its normal pre-war prosperity. The officers elected at this meeting for the ensuing year are:

President, E. C. Garrity, National Plumbing & Heating Supply Co., Chicago; First vice-president, E. I. Leighton, Leighton Supply Co., Fort Dodge, Iowa; Second vice-president, M. M. Cochran, Cochran-Sargent Co., St. Paul, Minn.; Treasurer, Edward F. Niedecken, Hoffmann & Billings Mfg. Co., Milwaukee, Wis.; Secretary, Paul Blatchford, 1915 City Hall Square Building, Chicago.

Executive Committee: E. C. Garrity, M. M. Cochran, E. I. Leighton, Edw. F. Niedecken, C. V. Kellogg, Kellogg-Mackay Co., Chicago; J. D. Tschopik, Standard Sanitary Mfg. Co., Pittsburgh, Pa; W. E. Clow, Jr., James B. Clow & Sons, Chicago, Ill.; H. S. Rivitz, Hiram Rivitz Co., Cleveland, Ohio; A. B. Pierce, N. O. Nelson Mfg. Co., St. Louis, Mo.

National Committee: Geo. H. Gorton, W. B. Young Supply Co., Kansas City, Mo.; Albert A. Merkel, Merkel Brothers Co., Cincinnati, Ohio; Clarence V. Kellogg, Kellogg-Mackay Co., Chicago, Ill.; John Walker, Walker Mfg. & Supply Co., Detroit, Michigan; Murray W. Sales, Murray W. Sales & Co., Detroit, Michigan.

Delegates to the Chamber of Commerce of the U. S. of A.: George H. Bailey, Counselor Delegate, Bailey-Farrell Mfg. Co., Pittsburgh, Pa.; Isidore Weil, delegate, Weil-McLain Co., Chicago, Ill.

A complete report of the meeting will be published in the next issue of "Domestic Engineering."

COMPANIES RECENTLY INCORPORATED.

The Bailey Nipple & Machine Co., Buffalo, N. Y., has been incorporated with a capital of $20,000, to manufacture plumbers' specialties. The incorporators are C. Kauderer, P. A. Schoenbern, C. F. Eckel, all of Buffalo.

The Ansonia No-Fuel System, Inc., New York, N. Y., has been incorporated under Delaware laws with a capital of $2,000,000, to manufacture machinery and appliances for fuel-saving service. The company is represented by Arthur W. Britton, 65 Cedar Street, New York City.

Ford & Manion, Inc., Wilmington, Del., has been incorporated with a capital of $100,000 to manufacture electrical heating equipment and appliances. The incorporators are Joseph J. Ford and Francis T. Manion of Wilmington. Henry R. Isaacs, Equitable Building, Wilmington, Del., represents the company.

The Orlando Potteries, Orlando, Fla., has been incorporated in that city with a capital of $25,000 to manufacture plumbing fixtures and other kindred products. The incorporators are M. T. Deatwyler, president; Mary H. Ward, vice-president; G. D. Crebs, secretary and treasurer.

The Smith-Stuart Co., Newburgh, N. Y., has been incorporated with a capital of $40,000, to deal in plumbers' specialties. J. A. and L. T. Smith and S. W. Stewart, all of Newburgh, are the officers of the company.

NEW SUPPLY HOUSE IN NEW YORK CITY.

The Sanitary Equipment & Manufacturing Co. is the name of a new plumbing and heating supply house which has just started in business at 220 East 39th Street, New York City. The officers of the new company are: President, T. A. Stopford; vice-president, R. H. Hoile, and secretary-treasurer, Chester D. Klauber. These men have a large acquaintance in the trade through their long connection with the Fred Adee Co. of New York City.

TO MANUFACTURE ELECTRIC WATER HEATERS.

The Selso Co., Ogdensburg, N. Y., which was recently incorporated in that city with a capital of $50,000, will soon start the manufacture of electrically-operated water heaters. The officers of the company are H. J. Parker, M. H. Stevenson and R. C. Sanford, all of Ogdensburg.

MOVES TO LARGER QUARTERS.

Russell F. Kleinman, of Philadelphia, Pa., has just moved his offices and warehouse from 4508 North Eighth Street to 940-944 North Front Street in that city, where larger quarters have been secured. A railroad siding is a feature of the new location.

TO ADDRESS ANNUAL MEETING OF MASSACHUSETTS SANITARY CLUB.

Dr. Thomas Darlington, former Commissioner of Health in New York, is to be the speaker at the annual meeting of the Massachusetts Sanitary Club, to be held at the Boston City Club, Boston, Mass., on the evening of Wednesday, November 9. Dr. Darlington will talk on "Health and Efficiency," and it is planned to give up most of the evening to him, except for a brief business session at which officers will be elected for the year. A banquet will be served at six o'clock, followed by the business meeting and address.

CONFERENCE OF TRADE EXTENSION BUREAU ADVERTISING AND SALES MANAGERS OCTOBER 31st AND NOVEMBER 1st.

Under date of October 18th the National Trade Extension Bureau mailed a letter to manufacturers and jobbers of plumbing and heating supplies calling attention to the meeting of advertising and sales managers of firms that are members of the Bureau to be held in Evansville, Ind., on October 31th and November 1st. The letter reads as follows:

"Many valuable and practical ideas and suggestions were brought out last January at a conference of advertising and sales managers of members of this Bureau. A number of these

were adopted, and made an effective part of the program of work and literature of T. E. B. during the current year.

"Experience has shown the advantage gained from that conference in January. Inquiry has made it appear desirable that a similar conference should be called here at Evansville immediately following the Central Supply Association meeting in Chicago.

"The majority of opinions voiced indicates that October 31st and November 1st would be most acceptable and convenient dates. This, then, is a cordial invitation for your firm to be represented at Evansville on these dates, in the person of some executive of your advertising or sales force.

"The sales promotion work of the Bureau during the year, and the results thereof, will be reviewed. It is hoped that we shall be fortunate in arriving at many additional constructive suggestions and ideas as guide posts for the work of the coming year. An immediate result will be that contributing members of this Bureau will largely be able to co-ordinate their advertising and sales activities with the program of the Bureau.

"The writer will take pleasure in arranging hotel accommodations as desired, or you may wire or write direct to any of the following hotels: Hotel McCurdy, Hotel Sonntag, or Hotel Vendome.

"Please notify us at the earliest possible time that you will be represented here, in order that we may make adequate preparations in every way. An outline will be prepared, intended to facilitate to the utmost the proceedings of the conference. We earnestly hope to hear favorably, and at once, from you on this subject.

"Yours for bigger and better business,

"The National Trade Extension Bureau,

"H. E. Jones."

Another letter addressed to credit managers concerning the drive for "Better Bookkeeping Methods" contains this:

"The first of the year is not far off, and this is the time when many firms revise their bookkeeping methods. We feel that by getting this drive under way at this time, your customers would have an opportunity to try this system out for two months, which will give them an opportunity to iron out the kinks in its operation, and have it in good running order, so that they can start the new year with a clean sheet.

"Won't you let us hear from you so that we may count on your efforts, and put this thing over 100 per cent?

"Yours for better bookkeeping,

"The National Trade Extension Bureau,

"Accounting Service Department."

THE PRESIDENT'S CONFERENCE ON UNEMPLOYMENT.

Emergency Measures Recommended for Recovery of Employment by Herbert Hoover, Chairman.

The conference presents this summary of its recommendations for an emergency program for immediate adoption and prosecution. The views of the conference in amplification of these recommendations and as to measures which would contribute to restoration of industry and commerce will be given later.

1. The conference finds that there are, variously estimated, from 3,500,000 to 5,500,000 unemployed, and there is a much greater number dependent upon them. There has been an improvement, but pending general trade revival this crisis in unemployment can not be met without definite and positive organization of the country.

2. The problem of meeting the emergency of unemployment is primarily a community problem. The responsibility for leadership is with the mayor of each city and should be immediately assumed by him.

3. The basis of organization should be an emergency committee representing the various elements in the community. This committee should develop and carry through a community plan for meeting the emergency, using existing agencies and local groups as far as practicable. One immediate step should be to co-ordinate and establish efficient public employment agencies and to register all those desiring work. It should co-ordinate the work of the various charitable institutions. Registration for relief should be entirely separate from that for employment.

4. The personnel of the employment agencies should be selected with consideration to fitness only, should be directed to find the right job for the right man, and should actively canvass and organize the community for opportunities for employment. The registry for employment should be surrounded with safeguards and should give priority in employment to the emergency employment agencies.

5. The emergency committee should regularly publish the numbers dependent upon it for employment and relief that the community may be apprised of its responsibility. Begging and unco-ordinated solicitation of funds should be prevented.

6. Private houses, hotels, offices, etc., can contribute to the situation by making repairs and alterations and doing cleaning during the winter instead of waiting until spring, when employment will be more plentiful.

7. Public construction is better than relief. The municipalities should expand their school, street and sewage repair work and public building to the fullest possible volume compatible with the existing circumstances. That existing circumstances are favorable is indicated by the fact that over $700,000,000 of municipal bonds, the largest amount in history, have been sold in 1921. Of these, $106,000,000 were sold by 333 municipalities in August. Municipalities should give short-time employment the same as other employers.

8. The governor should unite all state agencies for support of the mayors and as the superior officer, should insist upon the responsibility of city officials; should do everything compatible with circumstances in expedition of construction of roads, state buildings, etc.

9. The Federal authorities, including the Federal reserve banks, should expedite the construction of public buildings and public works covered by existing appropriations.

10. A congressional appropriation for roads, together with state appropriations amounting to many tens of millions of dollars, already made in expectation of and dependence on Federal aid, would make available a large amount of employment. The conference, under existing circumstances, notwithstanding various opinions as to the character of the legislation and the necessity for economy, recommends congressional action at the present session in order that work may go forward.

11. The greatest field for immediate relief of unemployment is in the construction industry, which has been artificially restricted during and since the war. We are short more than a million homes; all kinds of building and construction are far behind national necessity. The Senate committee on reconstruction and production in March of this year estimated the total construction shortage in the country at between 10 and 20 billion dollars. Considering all branches of the construction industry, more than 2,000,000 people could be employed if construction were resumed. Undue cost and combinations have made proper expansion impossible and contributed largely to this unemployment situation. In some places these matters have been cleaned up; in other places they have not and are an affront to public decency. In some places these things have not existed; in others costs have been adjusted. Some materials have been reduced in prices as much as can be expected. When conditions have been righted construction should proceed, but there is still a

need of community action in the provision of capital on terms that will encourage home building. Where the costs are still above the other economic levels of the community there should be searching inquiry and action in the situation. We recommend that the governors summon representative committees—with the co-operation of the mayors or otherwise, as they may determine—(a) to determine facts and (b) to organize community action in securing adjustments in cost, including removal of freight discriminations, and clean-out campaigns against combinations, restrictions of effort and unsound practices where they exist, to the end that building may be fully resumed.

12. Manufacturers can contribute to relieve the present acute unemployment situation by—

(a) Part-time work, through reduced time or rotation of jobs.

(b) As far as possible, manufacturing for stock.

(c) Taking advantage of the present opportunity to do as much plant construction, repairs and cleaning up as is possible, with the consequent transfer of many employees to other than their regular work.

(d) Reduction of the number of hours of labor per day.

(e) The reduction of the work week to a lower number of days during the present period of industrial depression.

(f) That employees and employers co-operate in putting these recommendations into effect. A large number of employers have already, in whole or in part, inaugurated the recommendations herein set forth, and for this they are to be commended, and it is earnestly urged upon those employers who have not done so to put them into use, wherever practicable, at the earliest possible opportunity.

(g) Specific methods for solution of our economic problems will be effective only in so far as they are applied in a spirit of patriotic patience on the part of all of our people.

During the period of drastic economic readjustment, through which we are now passing, the continued efforts of anyone to profit beyond the requirements of safe business practice or economic consistency should be condemned. One of the important obstacles to a resumption of normal business activity will be removed as prices reach replacement values in terms of efficient producing and distributing cost plus reasonable profit.

We, therefore, strongly urge all manufacturers and wholesalers who have not yet adopted this policy to do so, but it is essential to the success of these measures when put into effect that retail prices shall promptly and fairly reflect the price adjustment of the producer, manufacturer and the wholesaler.

When these principles have been recognized and the recommendations complied with, we are confident that the public will increase its purchases, thereby increasing the operations of the mills, factories and transportation companies, and consequently reducing the number of unemployed.

BUSINESS THROUGHOUT THE COUNTRY IS REVIVING.

Business throughout the country may now be said to be on the upward trend. This revival movement may be only gradual, but the ultimate outcome of this gradualness will mean a general rejuvenation of the nation's business, which the merchant of today is eagerly looking forward to. That this revival has been started is noted in a report just issued by R. G. Dun & Co., which says: "With recognition of the unfavorable features which still prevail, the fact is nevertheless clear that business is reviving gradually. Some of the current improvement is seasonal, a sudden turn to lower temperature quickening retail trading, but gains also appear which plainly are not due to weather influences.

"Movements in basic industries are especially important because of their direct and indirect bearing on different lines, and a further recovery in iron and steel and lumber, among other branches, serves to strengthen sentiment. The Pacific Northwest reports an enlarging demand for lumber from the East, while iron and steel output at leading centers is rising above the point of extreme depression of last summer. Such phases as these do not measure fully the scope of the economic recuperation, but are representative of the constructive changes that are in progress, and tend to modify the unsatisfactory aspects which continue present. Of the latter conditions of unemployment remain conspicuous, and exert a very decided effect on distribution of goods in consuming channels. The price question is also influential in curtailing the retail turnover, and even special offerings at reduced prices do not meet with the response that would develop if the public purchasing power were not restricted. Despite the elements making for caution, however, the disposition in an increasing number of instances is to place moderate-sized commitments more frequently, the depleted stocks of merchandise being a factor in this connection. In some sections, as in the South, where materially higher cotton prices have stimulated renewed confidence, there is more willingness to anticipate future requirements."

Another report also noting a general improvement in business throughout the country, is that just issued by Bradstreet's, which says: "Industrial expansion previously reported has solidified into some definite statistics of enlarged production of basic commodities, notably coal and coke, iron and steel, lumber, cement, other building materials and hardware. From quite a number of cities, reports are that a small but still perceptible gain in employment is noticeable. Perhaps the most notable step forward, however, is that revealed in the increasing number of reports indicating better collections. Crop reports, excepting those as to cotton, are mainly good, indicating that late summer weather repaired some of the damage reported to late crops earlier in the season. Corn is a large but irregular crop, insect damage and molding being noted.

"Perhaps the best description of the week's events is that furnished by the phrase 'further moderate improvement,' sight not being lost of the fact that buying is still largely for present or nearby needs, the filling of these wants being the basis of the gains in preceding weeks, now visible in the form of definite monthly statistics."

Individual industries show decided improvement also. The largest of these individual industries is the one involving building construction. Reports for the month of September show that an increase in operations of 11½ per cent was made over the month of August. This, in itself, is significant of the general increase in business. When it is shown that people are buying homes, it is a sure sign that business in other lines will doubtless come in for its share of the home-builders' pocket book, which is today having its strings slackened a bit. The F. W. Dodge Co. reports: "Activity in the building industry, as measured by contracts awarded reached the highest level of the year during September. The value of contracts awarded during the month in the twenty-seven northeastern states was $246,186,000, a figure which, incidentally, is the largest for September on record. The September total shows an increase of 11½ per cent over the August figure, whereas, during the ten-year period previous to 1921, the average September aggregate is 14½ per cent less than the average for August.

"Although the greatest increase in September was evident in the New York district, substantial increases are noted in the entire Middle Western territory, comprising the Pittsburgh and Chicago district. New England and northwestern states and the Middle Atlantic states showed a decline.

Possibly the largest increase in building operation during September was noticed in New York. This month will doubtless become historic in local building annals because of the vast amount of new construction reported. Reports show that during September the total of contracts awarded in New York State and New Jersey, north of Trenton, amounted to $85,899,500. This total is 41 per cent greater than that of the preceding month. Under ordinary conditions the September building figures indicate a seasonal decline in the volume of new construction placed under contract. The previous maximum total for this territory was $80,324,000, which was reached in August, 1919.

Other indications of a business revival come from a New York merchant who recently returned from a tour of the New England industries. He reports that while foundry operations in that territory are still somewhat irregular, there are many lines in which the recent improvements have been spectacular. Notable among the lines of greatest activity is hardware. Today several of the largest manufacturers of this commodity are operating at capacity, and the trade as a whole, at least as regards demand from New England factories, is said to be on an extremely satisfactory basis.

This surge forward in business is not only in the New England states. Hardware merchants in other parts of the country are also doing an increased business, due, probably, to the general revival in building construction. Not alone in the hardware business is this increase noted. Dealers in plumbing and heating equipment and supplies are also optimistic over the recent spurt in their business. Jobbers of this material report a steady stream of orders coming in, with a daily batch of inquiries which have made them feel that business is improving.

Eliot Wadsworth, assistant secretary of the Treasury, in a recent address at the annual banquet of the New Hampshire Bankers' Association, predicted a revival of American business on a steadily improving scale. "We think the worst is over," he said. "We know that our main reliance, the home market, is beginning to revive, slowly perhaps, but on a sound basis. Certain industries, depending upon the export trade, will no doubt suffer seriously, but those businesses which depend upon the normal American life, the feeding, clothing, transportation and keeping warm of 110,000,000 people are going to do business on a steadily improved scale."

It is the concensus of most manufacturers and dealers that this year's slogan, "1921 Will Reward Fighters" has been most effectively changed to "1921 Is Rewarding Fighters." The so-called "buyers' strike" is nearly over and most of the dollars are back to work, gradually putting the country back to its pre-war position.

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded as reported by the "American Contractor:"

$250,000. Church, Columbus, Ohio. Holy Name Congregation.

$225,000. School and Central Heating Plant, Reinbeck, Iowa. Consolidated Independent School District.

$200,000. Plant, Cumberland, Md. The Paragon Motor Co.

$200,000. Armory Building, Kankakee, Ill. State of Illinois.

$200,000. Store and Office Building, Richimond, Va. M. E. Publishing Co.

$200,000. Church, Chicago, Ill. The 14th Church of Christ, Scientist.

$175,000. Warehouse, Bethlehem, Pa. Keystone Supply & Mfg. Co.

$160,000. Garage and Warehouse, Pittsburgh, Pa. A. J. Schmitz.

$160,000. School, Frankfort, Ind. Board of Education.

$150,000. Bank Building, Chicago, Ill. Kenwood Trust & Savings Bank.

$130,000. School, Fenton, Mich. Board of Education.

$125,000. School, Terre Haute, Ind. Board of Education.

$125,000. Bank, Chicago, Ill. Broadway Trust & Savings Bank.

$125,000. Stores and Apartments, Evanston, Ill. Nazarian Brothers.

$125,000. Plant, Cleveland, Ohio. The City Ice & Fuel Co.

$100,000. Postoffice and Substation, Chicago, Ill. Jacob Kulp and H. M. Smith.

$100,000. School, Hillsboro, N. C. Board of School Commissioners.

$120,000. Gymnasium Building, Fulton, Mo. Westminster College.

$125,000. Residence and Garage, Cleveland Height, Ohio. Owner's name withheld.

$560,000. Stores, St. Louis, Mo. F. L. Cornwall and Sam Hamburg.

$500,000. School, Cleveland, Ohio. Board of Education.

$200,000. Bank Building, Store Rooms and Office, Sunbury, Pa. Sunbury Trust & Safe Deposit Co.

$150,000. Bank Building, Philadelphia, Pa. Union National Bank.

$140,000. School, Winchester, Ill. Board of Education.

$100,000. School and Auditorium, Shamokin, Pa.

$100,000 residence and garage, Oakwood Village, Ohio, Peter Kuntz.

$100,000 club house, Tonawanda, N. Y., B. P. O. E. Lodge.

$100,000 store and loft building, Chicago, Ill., Mr. Brower.

$100,000 lodge building, Woodhaven, L. I., N. Y., Enterprise Lodge No. 228.

$100,000 hotel, Chicago, Ill., F. W. Peck Estate.

$100,000 church, Bluefield, W. Va., Presbyterian Church.

$100,000 school, East Orange, N. J., City of East Orange.

$300,000 school, Chadron, Nebr.; Board of Education.

$250,000 hospital building, Alton, Ill.; State of Illinois.

$250,000 church, Montclair, N. J.; Central Presbyterian Church.

$200,000 armory building, Kankakee, Ill.; State of Illinois.

$200,000 laundry and power plant, St. Louis, Mo.; Excelsior Laundry Co.

$175,000 hospital, LaFayette, Ind.; Indiana State Soldiers' Home.

$150,000 club house and terrace, Hinsdale Golf Club.

$150,000 hotel building, Beckley, W. Va.; Beckley Hotel Co.

$150,000 hospital, Oak Park, Ill.

$135,000 store and hotel building, Chicago, Ill.; Wm. Strohom.

$130,000 public garage, Brooklyn, N. Y.; Jos. M. Bacon.

$125,000 school, Des Moines, Ia.; Woman's Missionary Society of the M. E. Church.

$125,000 bank, Chicago, Ill.; Broadway Trust & Savings Bank.

$115,000 shop, Philadelphia, Pa.; City of Philadelphia.

$100,000 school, near Sharpsville, Ind.; C. A. Rose.

$100,000 school, Angola, Ind.; Board of Education.

$100,000 school, St. Paul, Minn.; Board of Education.

$200,000 store and hotel building, Chicago, Ill.; Kurt Rosenthal & Co.

$160,000 apartment house, New York City; Tyrol Realty Co.

$100,000 sanitarium building, Wauwatosa, Wis.; Milwaukee Sanitarium.

PERSONAL MENTION.

William E. Clow, Jr., vice-president of James B. Clow & Sons, Chicago, has returned to his desk after ten days' absence, following injuries he received while participating in the Fox Hunt at the Onwentsia Country Club two weeks ago.

Howard Coonley, president of the Walworth Manufacturing Co., of Boston, Mass., has been named as chairman of the Emergency Committee appointed by Governor Cox of Massachusetts to work out plans to assure the people of the state food and fuel in the event of a railroad strike.

James A. Messer, president of the James A. Messer Co., Washington, D. C., has been invited by Herbert Hoover, Secretary of Commerce, to become a member of an Advisory Committee on Building Codes, representing the plumbing industry of the United States, which is being created by the Department of Commerce at Washington, D. C., in an endeavor to stabilize building requirements in our country.

Frank W. Hubbard, president and treasurer of the W. B. Hubbard & Sons Co., of Boston, Mass., is getting an enviable reputation as a golfer. Mr. Hubbard recently won a silver cup emblematic of the championship of the Russell Cottages Golf Association on a tournament play at Kearsarge, N. H. The event lasted six days, and Mr. Hubbard was opposed by golfers from Connecticut as well as from many sections of his own state.

Josiah E. Willitts, who has been representing various manufacturers, among them The Beaton & Corbin Mfg. Co., Southington, Conn., has been appointed sales manager of the Keystone Supply & Mfg. Co., Philadelphia.

Richard E. Wall, 185 Devonshire Street, Boston, Mass., and **E. G. Stratton,** Commerce Building, Erie, Pa., have just been appointed sales agents in the New England and Buffalo territories, respectively, for the Pioneer Alloy Products Co., Cleveland, Ohio.

John O'Donnell, secretary and manager of the O'Donnell Steam Heating Co., of Evansville, Ind., which recently went out of business, has opened an office at 16 Hartmetz Building in Evansville, Ind., as agent for manufacturers of boilers, radiators and heating specialties.

TRADE LITERATURE

"Keener's Klips of Smiles."

The above is the title of a humorous folder just issued by The H. R. Kuehner Co., manufacturers' representative of Camden, N. J. The folder is Volume 1, No. 1, and is entitled "Verse and Worse" or the (Anti-Volstead Edition). Several bits of rhyme and free verse put pep into the columns, which are "edited and compiled by the entire works, including the office boy."

A Water Heater Slogan Contest.

The American Heater Corporation, Sixth and Carr Streets, St. Louis, Mo., in an effort to secure three snappy slogans describing the American heater has just mailed wall hangers, lithographed in four colors, to the plumbing trade. The wall hangers are the size of the heater. The prizes consist of three American heaters, one listed at $290, the other at $225, and the third at $185. The winners will receive these heaters, freight prepaid and the concern will also pay the cost of installation, not to exceed $30 per heater. The contest closes November 20th and it is open only to architects, jobbers of plumbing and heating supplies, master plumbers and their employes.

Put a "Bath a Day" sticker on your folder.

Twenty Years Ago in "Domestic Engineering"

Saturday, October 26, 1901.

Annual Meeting of C. S. A.—The seventh annual meeting of the Central Supply Association, held at Chicago, October 22nd, proved the largest and most enthusiastic meeting in the history of that association, an even hundred being present. The officers for 1901-1902 are: President, E. A. Morris, Detroit Lead Pipe & Sheet Lead Works; first vice-president, A. F. Gartz, Crane Company, Chicago; second vice-president, J. B. Rahm, United States Supply Company, Omaha; treasurer, Edward F. Niedecken, Hoffmann & Billings, Manufacturing Company, Milwaukee; secretary, Paul Blatchford, Chicago.

To Heat Oak Park.—The Yaryan Heating Company, of Toledo, Ohio, has organized a sub-company at Oak Park, Illinois, with a capital stock of $300,000, and will erect at once a heating and lighting plant equal in all respects to that at Evanston, Illinois.

Goes to Louisville Firm.—Joseph McWilliams & Company, of Louisville, Kentucky, have been awarded the contract for installing in the new Federal building at San Francisco the complete mechanical equipment consisting of boilers, engines, electric light plant, elevators, water supply system, heating and ventilating apparatus at a cost of $220,517. This is the largest contract for mechanical equipment of this kind ever awarded by the United States Treasury Department.

The Metal Market.—Foundry 2, Pittsburgh, $15.00; Bessemer Pig, Pittsburgh, $15.85; lead, desilvered, $4.37½; copper, lake ingot, $17.00; antimony, Hallett's, $8.37½.

Recommends Sanitary Inspection.—The Board of Health of Memphis, Tennessee, has recently offered to furnish free inspection of the sanitary condition of premises about to be occupied, upon application of the prospective occupant.

John J. Santry Dead.—John J. Santry, late treasurer of the Master Plumbers' Association of the Borough of Richmond, and one of the best known plumbers in New York, died October 17. Mr. Santry was one of five brothers, all of whom were plumbers.

Masters Declare War.—The master plumbers of Honolulu have declared war on the Board of Health. They are making a test case in the courts as to whether the Board of Health has the right to dictate the kind of piping that must be used in house plumbing.

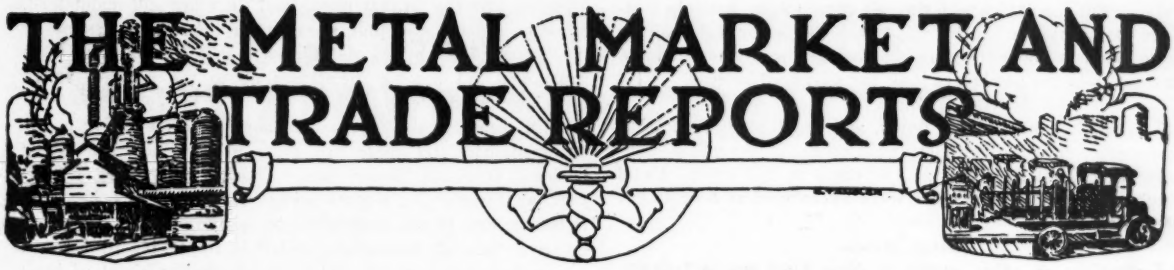
An Interesting Relic.—Robert A. McCleary, of the long established plumbing firm of J. S. McCleary & Son, Philadelphia, has a curiosity in the shape of a section of the first terra cotta drain pipe manufactured in the Quaker City. It was dug up in making a sewer connection, and must have lain in the ground more than forty years.

Manufacturer Entertained.—L. Wolff, of the L. Wolff Manufacturing Company, Chicago, among the largest manufacturers of plumbing goods in the United States, was tendered a luncheon on October 17, at the Duquesne Club, Pittsburgh, by Francis J. Torrance, of the Standard Sanitary Manufacturing Company.

Highest Award.—The Atlas Pipe Wrench Company, of New York and San Francisco, received from the Pan-American Exposition the bronze medal, the highest award made for an exhibit of pipe wrenches.

Voluntary Offer.—The plumbers and steamfitters of Southbridge, Mass., will hereafter work nine hours instead of ten hours a day, but will receive the same rate of pay as formerly. Contractors have given notice that on and after Monday next the charge per hour for a plumber will be 45 cents, and for helpers 20 cents.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Active buying in finished steel was not so prominent in the market last week, partly due, it is believed, to the doubt over the outcome of the railroad situation and the holding back of important operations until this is settled. This is said to have been the case especially in the new building operations under way. On the other hand, finished steel producers in the Pittsburgh district report a slight increase in volume of inquiries, indicating a healthful sentiment behind the temporary inaction. There are some exceptions to this rule, however, notably that of sheets, for which orders have been reaching mills in better volume than usual.

The productive rate for sheets last week was above the average of the past few months, and buyers are inclined to cover for some time ahead, showing concern as to the trend of prices. For the moment sheet prices are not yet uniform. Business is being accepted at the 3 cents base for black and 2½ cents for blue annealed, while a larger portion of independents are asking more.

The quieter demand for cold rolled bars has become so marked that prices have weakened materially, and in one instance 2.15 cents was accepted by a producer for a round tonnage during the past week. On the other hand, the market is nominally at 2.25 cents, and some producers decline to take any less.

A matter of paramount interest to the steel industry developed on Saturday in a reduction of steel rails by the United States Steel Corporation, which announced that its subsidiary companies would lower the price of open-hearth rails to $40 per ton, which means a rather sharp cut of $7 a ton. Nothing was said about the Bessemer product, but it is presumed that the old differential of $2 per ton will be maintained, which will bring the prices now current by the leading interest down to $38 and $40, respectively, for Bessemer and open-hearth, as against the former prices maintained since early last December of $45 and $47, respectively. The reduction, it was announced, was made without reference to the cost of production, which it was hoped would be rectified by lower freight rates and increased business. How far the independents will go in the matter of meeting the competition of the leading producer will be watched with interest. It may be presumed that the new price at least will become general. The railroads have been buying a few rails urgently needed, but the 1922 requirements have not been placed, pending a price readjustment.

The steel market as a whole has been quieter, with a noticeable decrease in the volume of tonnage placed for heavier products. Competition has been very keen, and prices have shown a tendency to weaken. The prices at which fabricated contracts have been taken are said to have represented a loss to the contractors, though prices for structural shapes and steel bars and plates have been shaded in many instances. Demand has fallen off for sheets, wire products and tin plate, but an accumulation of orders enables the mills to keep running at between 70 and 75 per cent of capacity. To continue operations on this scale will require additional tonnage within the next six weeks. There is just now a general tendency to hold off except for urgent needs, pending a readjustment of freight rates. Warehouse business is quiet for the same reasons. Jobbers are buying sparingly, and their own distribution has been light.

Last week was a quiet one in the pig iron market. There was the usual number of small lot inquiries, ranging between carloads and 200 tons, and some anxiety was shown by consumers to have their orders rushed so as to guard against the possibility of interference with railroad traffic. But the activity of a fortnight ago has been absent. The larger smelters have covered their requirements for the present and are content to watch the market for developments.

Notwithstanding an increased production, stocks in furnace yards have been reduced, and some have very little, if any, to offer. From the statistical position the market is therefore strong, though the lack of recent demand has somewhat of a depressing effect. It has not been sufficient, however, to materially affect prices.

Great expectations are based upon freight rate possibilities. It is taken as a matter of fact that transportation charges will be considerably reduced within the near future and result in improved business generally. In the mean time the movement is bound to be slow. There has been some disposition on the part of the foundrymen to cover some of their needs for next year, but the furnaces do not approve this business, as future costs are too uncertain. Prices for pig iron are quoted as follows:

No. 2 Pittsburgh	$22.96@$23.46
No. 2 Philadelphia	22.40@ 22.90
No. 2 Southern, Birmingham	19.00@ 19.50
No. 2 Chicago	21.00@ 22.00
Basic Valley, furnace	19.25@ 20.00
Bessemer, Pittsburgh	21.96@ 22.46

Lead.

Lead is beginning to show the signs of an easier market. Demand has been very quiet, but as yet there is no change in the New York price, which is still quoted at 4.70 cents. In the West the market is easier, with some anxious sellers at 4.45 cents in East St. Louis.

Tin.

The consuming demand for tin has been no better than light, but the market is strong and higher, with London prices up and sterling exchange higher. Sellers at the end of the week asked 29 cents for spot Straits tin and 29¼ cents for futures. Arrivals during October have been 1,835 tons at Atlantic ports and 65 tons at Pacific ports. Tin afloat is estimated at 3,125 tons.

Copper.

The copper market recently has proved a disappointment, being exceptionally quiet and has lost much of that strength which not long ago appeared to be so promising. It should not be inferred from this, however, that chances favor a further reduction in price, as the market is under strong control. Consuming requirements have been so light that the smaller selling agents, willing to take the business, have been able to keep the wants supplied on the basis of 13 cents, and still offer the metal at this figure for delivery over the balance of the year. The larger interests have been satisfied to let their competitors take the business at this price and are

holding out for 13¼ cents, though some might possibly consider 13⅛ cents for nearby shipment. The statistical position of copper is admittedly growing stronger, and when demand again sets in the producers look for advanced prices.

Zinc.

The market has quieted down, and the tone is somewhat easier after showing some strength earlier in the week. Sellers quoted East St. Louis at 4.60 cents to 4.65 cents. Metal Exchange prices at the close were unchanged at 5 cents for New York.

Other Metals.

Quotations on other metals in New York are as follows:
Aluminum (in 50-ton lots) 99% and purer....25 cents per lb.
Antimony (Chinese and Japanese).....4.55 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	10 to 10½ cents	11½ cents
Copper, light	8½ to 8¾ cents	9¾ cents
Brass, heavy	4⅝ to 4⅞ cents	5⅞ cents
Brass, light	4½ to 4¾ cents	5¾ cents
Lead, heavy	4 to 4¼ cents	4½ cents
Tea lead	2½ to 2¾ cents	3¼ cents
Zinc	2¾ to 3 cents	4 cents
Solder joints	6 to 7 cents	8 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying	Selling
Heavy yellow brass	5 to 5½ cents	6¼ cents
Brass, light	4 to 4¼ cents	5 cents
Red brass	7½ to 8 cents	9 cents
Lead, heavy	3½ to 3¾ cents	4 cents
Copper, light	7½ to 7¾ cents	8 cents
Copper, heavy	9 to 9½ cents	10½ cents
Tea lead	2½ to 2¾ cents	3¼ cents
Zinc	2 to 2¾ cents	3 cents
Solder joints	4½ to 5 cents	5½ cents

IN THE NEW YORK SUPPLY MARKET.

New York, Oct. 24—The threatened railroad strike is at the present moment the dominant theme of discussion in the New York supply market, opinions differing, at the time this is written as to whether the situation will be amicably adjusted or whether the men will actually go out. The possibility of a railroad tie-up, however, has not yet developed any noticeable rush for heating and plumbing materials on the part of local consumers, although, in the event of a protracted strike stocks of some supplies, particularly in the heating field, would probably not be heavy enough to meet the local demand. This indifference is regarded by some representative supply jobbers as significant of present business conditions.

"Under ordinary circumstances," said Hallock W. Beals, of the Biddle Purchasing Co., one of New York's heating supply houses, "the prospect of a railroad strike would lead to firms in our line, and of course others also, being swamped with orders, so as to get the goods delivered before stocks were exhausted, and the fact that this is not now happening shows that the people interested are not yet ready to do business on any extended scale. So far as stocks on hand are concerned, we have, like other houses in our line, a reasonable stock, but not enough for a big rush. At the same time there is plenty of material in hand at the distributing centers.

"Normally the heating business increases in the Fall and at the beginning of the year and declines in the Spring and about midsummer. There is a certain amount of business being done now but it is all on restricted lines—small repair and replacement work, in the way of getting ready for winter."

The radiator and boiler advances reported in September as becoming effective in that month and since are still maintained, officially at any rate, but there is an impression in one or two quarters that offers of business at the former prices from firms who did not tie themselves up to the advance would probably be accepted.

With regard to soil pipe and fittings, the drop of five points is maintained and there are some firms which are taking business at a still lower rate. Charles Hirschfield, of the McCann Supply Co., reports prices in this line as being quite irregular, due to the uncertainty as to the outlook. "Prices," he says, "are all fluctuating, and it is impossible to forecast twenty-four hours ahead. There is a certain amount of business being done but it is mostly small repair work, although the wrought iron market shows signs of improvement on a rather larger scale."

At the office of the J. R. McMann Co., another jobbing house, a representative of this firm said, "At the present time there is a reasonable demand for such lines as iron pipe, valves and fittings but this is mostly wanted for the kind of small repair and replacement work that always comes along at this season work that cannot be postponed. The soil pipe market is very uncertain and the recent decline of five points is being exceeded in various quarters. Before any noticeable advance in orders can be reported there will have to be a decline in freight rates or in wages or both. Then we can go ahead with some confidence."

Mr. Weaver of the Central Tube Company, thinks a price decline is due. "But that won't come," he said, "until there is a reduction in freight rates, and even then any action the railroads may take along those lines will not and cannot affect prices in the plumbing goods trade all at once. So long as the railroad problem remains in its present unsettled condition, there is no chance of any large revival in the demand for plumbing materials of any kind."

Mr. Weaver does not see any really big business in sight. "There is a certain amount of activity in apartment house construction, but that is about all," he said. "Compared with previous months, however, there is a steady if not very large increase in the demand for plumbers' supplies of almost all kinds in September, and again in October."

G. E. Burford, of the McCann & Taylor Co., reported a steady increase in business during recent months but not on any extended scale. "It is just the usual fall orders," he said. "We do not anticipate any big revival in the demand for some time to come. So far as our organization is concerned we are not worrying about the railroad situation very much as we carry large stocks."

E. Smolka, of the supply jobbing house of the same name, takes a very optimistic view of conditions. While the activity manifested is not in any sense a boom, he says the demand, so far as his firm is concerned continues steady, and is on the upgrade all the time, this applying to plumbing and heating goods generally.

Collections, Mr. Smolka pointed out, were very satisfactory at the present time, according to his firm's experience, and this feature, he declared, could be taken as a pretty fair barometer of business conditions.

The Federal Trade Commission may rule on open price association soon. It is understood that the Southern Wholesale Grocers' Association has forwarded a communication to the commission asking that the federal body set forth its attitude relative to certain activities which are carried on by the association. It is understood that the association has asked specific questions. While the act of the Federal Trade Commission does not allow the commission to rule in advance or to give advice on specfic practices, it is understood that the commission will issue a statement regarding the questions of the grocers' association.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

Journeyman plumbers and gas fitters returned to work last week following the signing of an agreement between their organizations and the Chicago Master Plumbers' Association. The return to work of the journeymen was effected pending a rehearing of the wage award before Judge K. M. Landis, arbiter for the building industry here. No date for a rehearing of the plumbers' wage question has been set, however.

Much of the work tied up because of the plumbers' refusal to return to work has again been started, and it is expected that with the last big stumbling block removed, more building construction will be under way in a short while.

Building permits issued for the first day of the past week number twenty-three. The largest permit in valuation issued was for a $55,000, one-story brick store building, while other permits range down from that figure. Permits for flat buildings ranging in price from $32,000 down to $18,000 were issued, as well as permits for several $10,000 and 12,000 residences, and business buildings. Along with the announcement of the number of building permits came the presentation of plans for a $400,000 motion picture house for the Northwest side. This structure will be one of the most modern theaters in the city, and will have a seating capacity of 2,500. The building will have a frontage of 124 ft. on North Avenue and 150 ft. on Halsted Street, with offices and stores in the building in addition to the theater.

The Murphy Plumbing Co., 23 East Congress Street, and the Carl John Stein Co., 166 East Grand Avenue, have the plumbing and heating contracts, respectively, on the field house and playground for Chase Park at Leland and Clark Streets.

Thomas Donlan, 7249 South Halsted Street, will install plumbing in six residences which are to be erected at 8001-09-15-21-29-31 Clyde Avenue for W. M. Fitzpatrick at a cost of approximately $6,000 each.

The Charles C. Breyer Co., 1545 West Division Street, has the contract to install plumbing, and William Lees, 107 North Oak Park Avenue, the heating contract, on the two-story residence and garage to be erected on Euclid Avenue near Augusta Street, Oak Park, Ill.

William P. Arnold, 2345 West Roosevelt Road, is to install plumbing in five one-story residences under construction on Harding Avenue near Leland Avenue for Tryon & Davis.

T. E. Whitechurch, 33 West Lake Street, has the plumbing contract on the $20,000 store and rooming house building to be erected at Cicero Avenue and Twenty-third Street, Cicero. The structure will be two stories high, 50x120 ft., and will contain four stores and twenty-five rooms.

The E. J. Claffey Co., 16 East Illinois Street, and the Murphy Plumbing Co., 23 East Congress Street, are to install plumbing and heating systems, respectively, in the store and office building erected at Oak Street and Michigan Avenue for the Palmer Estate. The structure will be three stories, 87x103 ft., and will contain five stores and twenty offices.

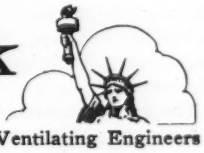
George W. Schirmer, 3931 West Madison Street, has been awarded the contract to install plumbing in the two story stores building being erected at 3855 West Madison Street for the Lambert Tree Estate. The heating contract was awarded to the Davis Construction Co., 56 West Kinzie Street.

Other Cities in the State.

The Champaign Heating & Plumbing Co., Champaign, has secured the plumbing and heating contract on the $75,000 two and three story natural history building to be erected on the Illinois University grounds at Urbana.

The Gem City Plumbing & Heating Co., 718 Main Street, Quincy, has the plumbing and heating contracts on the $170,000 community high school to be erected in Winchester, Ill., for school district No. 47, and in the community high school to be erected in Elsberry, Mo. The plumbing in the community high school to be erected in Chapin, Ill., will also be installed by this company.

New York



New York Chapter of Heating and Ventilating Engineers Opens Season.

The New York Chapter of the American Society of Heating and Ventilating Engineers opened its winter season on Monday evening, October 17th, with a dinner and meeting at the Building Trades Employers' Club, 30 West 33rd Street. Some 200 members and guests attended, and were welcomed by A. S. Armagnac, the new president of the New York Chapter, who pointed out that this fine attendance was significant of the splendid fraternal spirit which had developed within the organization within the past few years.

Automatic Oil Heating for Homes, and Steam and Water Heating by Gas constituted the principal subjects of discussion. A paper on the former topic was read by Harry G. Davis, president of the Cornell Utilities Co., of New York City, who told of the growth and prospects of such installations in eastern territory.

"Of second importance to the type of the oil-burner itself," said Mr. Davis, "is its application to the heating plant in which it is to be placed. Unless this is intelligently done, failure is bound to result, no matter how good may be the burner. Our experience has demonstrated that it is necessary to take every precaution in guarding against futile attempts to install an oil burner in a plant where it is impossible for it to function properly. This experience has resulted in our fixed policy to make no installation of an oil burner until we have carefully and thoroughly made a survey of the heating plant and premises in which we propose to make the installation. Once we have determined the heat loss of a residence, checked the sufficiency and the efficiency of the heating plant, and studied the design and construction of the boiler, we feel that we are then able to foretell beyond a peradventure of a doubt just what will be the success of that installation."

Mr. Davis declared that at the current price for oil and coal in New York, the basic cost of fuel is about the same.

In a heating plant which will absorb 70 per cent of the heat delivered to the boiler, he explained, 100 gallons of oil has the same heat value as one ton of coal.

Following Mr. Davis's interesting paper, William C. McTarnahan, vice-president and general sales manager of the Petroleum Heat & Power Co., contributed some further remarks on the subject of oil-burning heating plants.

A paper on Steam and Water Heating by Gas was the contribution of N. T. Sellman, service engineer of the American Gas Association. Mr. Sellman declared that he considered any private house with less than 3.000 sq. ft. of hot water, or less than 2,000 sq. ft. of steam, as good prospects for a gas heating plant. He admitted that in most cities supplied with artificial gas the increased operating cost has prevented a more general use of gas for domestic heating, but he contended that, because of its other advantages, even though gas may, in some instances, be three times more expensive than coal, on a straight fuel comparison, there are many homes that should, and are, being equipped with gas boilers at this cost ratio.

"In small and medium-sized dwellings," he declared, "this cost ratio will be two to one or less when all costs chargeable to coal are added, and if you consider the comfort obtained without being dependent on anybody else, I think you will all agree that there are many homes for which you can conscientiously recommend gas-heated boilers. A properly installed gas-fired heating plant is so automatic, it should be remembered, that no attention is required more than what is necessary for the particular thermostat chosen. If it is of the eight-day-clock type, winding once a week constitutes the entire labor. If it is of the automatic air type, even this is eliminated."

The speaker asserted that, apart from straight fuel cost, gas is 60 per cent more efficient than coal, and that most of this gain is realized in the fall and spring when the coal boiler is most inefficient, while the gas boiler efficiency is practically the same, irrespective of the load.

He pointed out, too, that the gas-fired hot water system is about 25 per cent more efficient than the gas-fired steam system; this, he explained, being mainly due to the more accurate control and lower working temperature of the hot water system.

The program of the evening was opened by Dean F. Paul Anderson, of the University of Kentucky, the new director of the Society's Research Bureau, who told the heating and ventilating engineers of the projected researches of the coming year. "My present hope," he said, "is to carry out to a degree the work that Professor Allen planned. The problems now being carried out in the laboratory are those you, gentlemen, originated: The problem of the relation between humidity, temperature and air motion is one; the development of apparatus that will give you absolute constants for the determination of heat transmission through various substances is another. A study of ozone and air-infiltration through buildings; a study of convextion and radiation of heat surfaces. These are some of the problems which are being carried on in a splendid way."

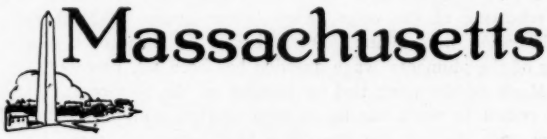
Dean Anderson then took up the question of co-operation with the universities and colleges in encouraging original research, and declared that the raw academic material is not suitable for getting those results sought by practical engineers. "Only men who have had long years of experience are able to take up the problems of engineering," he said, "and research men should be men of such experience. I hope that every member of the Society will send in, from time to time, problems in which he is interested."

Extravagance in providing institutions of learning with apparatus for experimental purposes was decried by the speaker, who told of one institution, that had obtained a Rolls-Royce chassis for use in its motor-testing laboratory. Promptly, on this windfall's becoming bruited among college professors, inquiries poured in to the common tune of "How did you do it?" he said.

Purdue, he pointed out, wants about $1,000 for experimental work this year; Yale, $600; and Missouri, $800.

"However, this year we have entered into real co-operative work," he added. "There are a number of simple problems that universities can help us with, but we must lay out in large detail the way in which we want this work done, and then all results should be turned in to one center and tabulated. We have approached several institutions on the question of co-operating with us on this work, explaining that the amount required would probably not be in excess of $125, which cost they might well pay as a part of their instruction expenses. Nineteen out of twenty so approached have signified their intention of carrying out the work and buying the necessary apparatus."

The dinner was a very enjoyable feature of this interesting meeting.



Boston and Vicinity.

Thomas Farrell, of Brockton, a member of the Board of Directors of the Massachusetts State Association of Master Plumbers, entertained the members of the board and their wives at the Brockton Fair the early part of the month. The trip to Brockton was made by automobile and the members of the party spent a most enjoyable day on the midway, at the trotting track and enjoyed other features of the big fair grounds.

The Efficiency Engineering Co., of Boston, has secured the contracts for the installation of vacuum heating systems in the Burnham school buildings, the Brownville-Stevens Co.'s building and in George E. Whitbeck's new residence, all in Northampton. This concern is also installing a vacuum heating system in the Myrton Hill Box Co.'s plant in Boston.

Maine Farmers in Need of Water Supply Systems.

A drought, which in some parts of New England has assumed a most serious aspect, is bringing home to many farmers the need of a water supply system. Wells in many sections have dried up and small streams, where the cattle had been in the habit of watering, have diappeared. Unless rain comes soon it will mean that the farmers may have to haul their water long distances.

The appended bit of repartee between the editor of the Boston "Globe" and the editor of the Biddeford (Me.) "Journal," published by these papers, gives a little inside information on the real situation in the Pine Tree state and should be a tip to Maine plumbers to get after water supply contracts.

"Now, then, Mr. Winter, come on! We've got our wood in."—Boston "Globe."

"But how about your water supply? Here in the rural regions of western Maine many more than half the wells are dry and heretofore dependable springs are at their lowest ebb. With the live stock coming to the barn, the prospect of being obliged to haul water for them as well as for domestic purposes is not an encouraging one for the farmers. Here we may have our wood in and our crops harvested, but we are not

anxious or willing for Winter to come until the prolonged drouth has been broken to the extent of filling the wells and natural reservoirs. It's a job which not even a solid week of rain would overdo."—Biddeford "Journal."

Connecticut

William Mallory, of Springdale, Conn., has opened a plumbing establishment in that town. He is located on Hope Street near Hartford Avenue.

F. & F. C. Booth Co., of Bridgeport, has the contract for plumbing and heating in a new parish house for the Olivet Congregational Church in that city. The building will be two stories high of brick and steel construction.

Bids are being received for the construction, plumbing and heating of a new fire station at Saugatuck, a suburb of Westport.

Rhode Island

Providence.

Architects Jackson, Robertson & Adams, Turks Head Building, having prepared plans for a branch bank building for the Industrial Trust Co. The structure will be two stories.

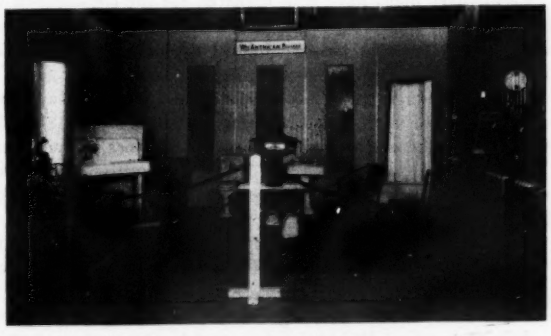
The Board of Contract and Purchase, at Cranston, has awarded contracts for plumbing at the Highland Park school. There were three bidders for the plumbing contract as follows: A. C. A. Robinson, Providence; J. H. O'Loughlin, Providence, and James E. Cuff, Providence. The contract was awarded to the lowest bidder, A. C. A. Robinson.

Architect Thomas F. MeLaughlin, Union Trust Building, has prepared plans for a two-story and a half residence for Lewis McGowan. The residence will be erected on Hilltop Avenue.

Ohio

Mansfield.

W. E. Antrican, a well known master plumber of Mansfield, had a very attractive exhibit at the Exposition held in the Coliseum in that city from October 4th to 7th. Water supply systems in operation were shown and attracted much attention from agricultural visitors. Heating systems and plumbing fixtures, including bath-tubs, lavatories, kitchen sinks, water closet combinations, showers and laundry trays, were also exhibited. The accompanying photograph will give the reader some idea of the appearance of the exhibit.



W. E. Antrican's Plumbing and Water Supply Exhibit at the recent Exposition in Mansfield, Ohio.

Pennsylvania

Harrisburg.

Simon J. Lutz, who recently opened a plumbing business at 916 North Sixth Street, has the contract to install plumbing and heating in the parsonage building for the Messiah Luthern Church congregation in that city.

F. E. Filson, 116 South Second Street, has the contracts to install heating in the $25,000 residences of J. H. Troup, Jr., and J. M. Edward.

James R. Diehl has recently opened a plumbing and heating establishment at 3028 North Third Street.

Chester P. Wharton has also recently opened a plumbing and heating shop at 3203 North Sixth Street.

Other Cities in the State.

John R. Parks, who recently started in the plumbing and heating business at East Pine Street, Selinsgrove, has the contract to install heating in the apartment building for Hendricks & Decker, now being erected in that city.

V. H. Kocher, Selinsgrove, is installing plumbing and heating systems in the Susquehanna University conservatory of music building and in the Hessinger Memorial Hall, and will install heating and plumbing in two other residences.

Scott H. Shafer, who recently opened plumbing and heating establishment in Sunbury and Selinsgrove, has the contract to install plumbing and heating in the Sunbury Overall Co.'s building in Sunbury and plumbing in a residence in Shamokin Dam.

Paul E. St. Clair, 54 North Sixth Street, Sunbury, will install plumbing and heating systems in the American Legion building in that city.

Harry L. Troup has recently opened a plumbing and heating business at 336 Sixth Street, Northumberland.

C. & J. Bryan, Opera House Block, Danville, are installing heating in the new bank and apartment building, being erected for the Montour County Trust Co., in that city.

New Jersey

The Educational Committee of the Master Plumbers' Association of Trenton, N. J., is making arrangements to have a moving picture exhibit on Tuesday, November 1st, in the recreation room of the Thomas Maddock's Sons Co., in that city. The picture will be devoted to the manufacture of range boilers.

West Virginia

The Kanawha Plumbing Co. has moved into new quarters at lower Virginia Street in Charleston, W. Va.

F. P. Kiser, J. R. Webb and W. J. Lough, operating the City Garage, Plumbing & Tinning Co., at Bridgewater, Va., have dissolved partnership. J. R. Webb has bought the garage business, W. J. Lough the tinning business, and F. P. Kiser the plumbing business.

The William Kerr Plumbing Co., of Clarksburg, W. Va., has been awarded the plumbing contract for the Heinze & Co. building at Fairmont, W. Va. Consideration $2,200.

PROFIT *in* GARAGE HEATERS

Auto owners are not curtailing their buying. Private garages must have heat or else radiators will freeze and crack, tires rot, batteries refuse to charge or else freeze, oil gets gummy and bearings score, gasoline refuses to vaporize and carbons up the cylinders, varnish checks, etc. A garage heater cures all these winter troubles and pays for itself over and over again.

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California

San Francisco and Vicinity.

Ground will be broken soon for the first unit of the plant of Reid Bros., manufacturers of hospital supplies, Irvington, Alameda county, Calif. The first unit will have 77,000 sq. ft. of floor space, and specifications call for a one-story steel and concrete structure, with a maximum glass area to conserve natural light for workmen who will produce delicate instruments. There will be four units in all. The plant will call for an investment of approximately $1,000,000.

Construction work on the new Fox theater at Broadway and Nineteenth streets, Oakland, will be started by November 1st, according to an announcement made recently by Architect Maury I. Diggs. The building will cost more than $500,000.

Los Angeles and Vicinity.

Examinations were held in Room 17 of the City Hall, the new quarters for the board of examiners, for all plumbers, in accordance with a city ordinance. Journeyman plumbers had their examination October 15th, while that for master plumbers will be held October 29th.

The rapid building of homes continues in the North Inglewood tract of the Los Angeles Investment Co. Forty families have purchased houses there since October 1st and are moving in as rapidly as the company can turn the houses over to them. There are enough carpenters and workmen employed to complete three homes each day.

An eighteen-acre tract, corner of Lincoln and Los Angeles Streets, Inglewood, is being subdivided and work will begin immediately on 77 four and five-room bungalows, to cost $250,000.

The unprecedented building activities in Los Angeles still continue, and judging from the number of building permits issued during the first ten days of October, it is thought that the September record will be broken. It is estimated there are 86,000 homes in Los Angeles, and that 10,000 more must be erected to meet the demand of the constantly increasing population.

The Milwaukee Building Co. is preparing plans for a theater building to be erected on Hollywood Boulevard near Cahnenga Boulevard for the West Coast Theater, Inc. The structure will be three stories, 120x230 ft., and cost $500,000.

Architect Homer W. Glidden has completed plans for a new school building at the Tenth and Valencia Streets school site. The structure will contain twelve class rooms, and cost about $96,000.

The Berger Morlan Co., 220 North Western Avenue, will erect 50 frame and stucco dwellings in West Hollywood. The dwellings are to contain five and six rooms, each with gas heating.

Preliminary plans have been prepared for the construction of an eight-story apartment house in Los Angeles. The structure will contain 150 apartments. John Parkinson and Donald B. Parkinson are the architects.

N. B. Plummer, 2825 HerKimer Street, has been awarded the contract to erect two kindergarten bungalows, one at the Westgate school site to cost $11,470, and the other at the Estara Avenue school, to cost $11,370. E. W. Crowell was awarded the plumbing for the former at $1,068 and the Glendale Plumbing Co. secured the contract for the latter.

W. W. Paden, Story Building, has secured a ninety-nine year lease on a lot at Sixth and Lebanon Streets, and will erect a twelve-story, 250-room hotel.

Long Beach.

The Union Iron Works, of Los Angeles, has prepared plans for the new factory building for the Golden State Woolen

Mills to be located at Seventeenth Street and Nadeau Avenue, Long Beach. The contract has been awarded to the Long Beach Brick Co. for approximately $130,000. There will be five units, all one-story structures.

The Park View Land Co., of Long Beach, will erect an eight, or possibly a twelve-story apartment building at the corner of Ocean Beach Avenue and Cedar Way to cost between $600,000 and $800,000.

Pasadena.

The Friendship Baptist Church of Pasadena plans to construct an auditorium with gallery and basement and a social hall and swimming pool on Vernon Street to cost $60,000. Norman F. Marsh, of Los Angeles, is the architect.

Walter Raymond, proprietor of the Raymond Hotel, Pasadena, announces that extensions and alterations are to be made on the hotel and that twelve new bath rooms are to be added.

W. C. Crowell has the contract to construct a three-story club building on North Marengo Avenue. The building will contain club rooms, kitchen, dining room dormatories, baths, etc.

Friendship Baptist church of Pasadena plans to construct an auditorium with gallery and basement, social hall and swimming pool on Vernon Street, to cost $30,000. Plans have been prepared by Architect Norman F. Marsh for a building of brick and frame construction.

Other Cities in the State.

The First Presbyterian Church of Downey is planning improvements to cost about $50,000, which will include a new one-story auditorium and gymnasium. The gymnasium will contain showers, dressing rooms and steel lockers, and a concrete swimming pool is to be constructed on the grounds.

The board of supervisors of Bakersfield is considering sites for the construction of a county hospital building and for a home for the indigent. It is planned to spend about $250,000.

Plans for the erection and equipment of a $350,000 group of school buildings in Selma have been made. The Union high school system to be completed by September, 1922, was announced recently by Principal J. R. Killop. The new group, which will hinge on a special election to be held November 3 to 5, will include a science building of two stories and basement, a one-story manual arts building to be erected in a semi-circle about the present structure. The manual arts building will be large enough to house a woodwork shop, blacksmith shop, machine shop and automobile mechanic's rooms.

The Homeopathic Medical Society plans the erection of a Hanemann hospital in Los Angeles to cost about $250,000. Plans are already under way, and a campaign will soon be started to raise money for the building. Dr. H. L. Shepherd is chairman of the committee on building.

The trustees of the First Presbyterian church of Long Beach have approved plans as drawn by Horace W. Austin for additional church improvements to cost about $30,000. The work will begin within a short time.

The Zion Lutheran church of Anaheim is planning the erection of a church edifice to cost about 33,000. A. H. Pibel has been awarded the general contract.

Peoria, Ill.—Ves R. Simmons & Co. have been incorporated with a capital of $3,000, to conduct a plumbing business.

Los Angeles, Calif.—W. N. Katz has moved his plumbing business from 2665 South Vermont Street to 4362 West Third Street, where he has arranged a modern office, sales room and display room.

Proposed improvements to the extent of $250,000 will soon be started on the Hotel Alvarado, Albuquerque, N. M., according to Fred Harvey, manager of a chain of hotels throughout the country.

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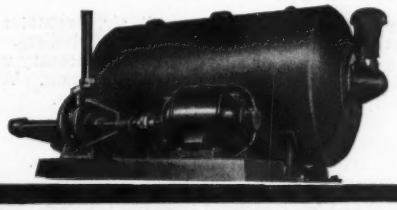

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are made to save fuel. So well do they perform this service that hundreds of factories, garages, schools, office and apartment buildings are using them today to save money that would otherwise be thrown away. They cannot help but save fuel. They automatically and dependably put the hot condensation back in the boiler, saving at least 15% of the annual fuel bill. When you sell a Trane Pump you render your customer a real engineering service. Write us for all the facts.

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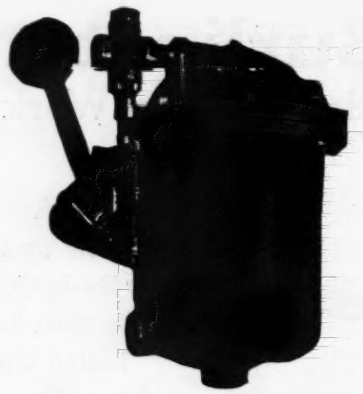

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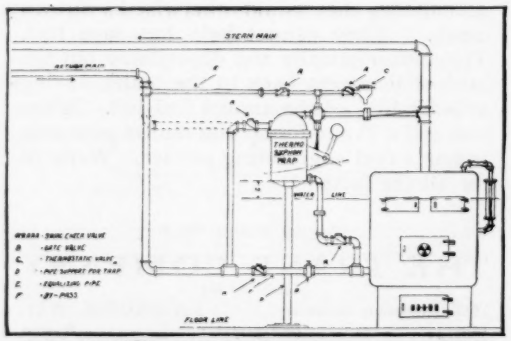
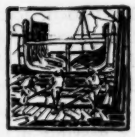


Application of Thermo Syphon Trap, showing proper method of piping for draining any heating system.

Oregon



Portland.

That building activities in Portland is holding up remarkably well for the fall months is indicated by a number of important projects listed for early beginning. Residence construction continues very active, with a good demand for all new homes.

One of the most important building contracts let in the Northwest for some time is the recent award by the Portland B. P. O. E., to Dougan & Chrisman, of Seattle and Portland, on a bid of $949,000. Bids for the structure were called for last spring, but no action was taken on the proposals submitted at that time. The proposed structure will be 5½ stories high, with basement and sub-basement of steel concrete and brick construction. In the basement, a large heating plant will be installed. Forty-two bedrooms have been provided, each with private bath.

F. W. Isherwood, manager of the Bridge & Beach Mfg. Co., has purchased a site at Fourteenth and Glisan Street, on which a one-story store building will be erected. Foundations strong enough for a five-story building will be laid. The structure will cost $30,000 and will be of concrete construction.

J. F. Shea, low bidder for plumbing in the sanitarium at East Sixtieth and Belmont Streets, on his bid of 8,490, received the contract. Other bidders were: De Temple Co., $8,689; Rushlight & Hastorf, $8,689; Highland Plumbing Co., $9,600; Finnegan & Williams, $9,500; Alaska Plumbing Co., $9,980; Coffey Plumbing Co., $10,829; John Peterson, $10,988; Kendall Heating Co., $12,427.

Architects De Young & Roald, Spaling Building, are preparing plans for the proposed church to be built for the Laurelwood M. E. Church on Forty-fifth Avenue, between East Sixty-first and Sixty-second Streets. Building will be of concrete and tile, 80x110 ft., and cost $40,000.

There is strong probability that a large Methodist hospital will be erected in Portland at a cost of between $300,000 and $375,000, according to Bishop William O. Shepard of the First Methodist Church, who is working out a plan to finance such a project.

Construction of a Shriners' Hospital for crippled children in Portland at an estimated cost of $200,000 will be undertaken as soon as plans can be completed, according to Frank S. Grant, illustrious potentate of Al Kader Temple, who has received the first complete details of the meeting of the Board of Trustees of the Shriners' Hospital project held in Atlanta, Ga. The Portland structure will be a part of the Shrine's nation-wide plan for hospital work.

The following bids were received by the city purchasing department recently for plumbing (a) and heating (b) in connection with the small-pox hospital under erection by the city: Fox & Co., (a) $810, (b) $1,175; J. F. Shea, (a) $957, (b) $1,260; Beard Bros., (a) $595; Sturges & Sturges, (a) $945, (b) $1,359; McPherson-Urban Co., (b) $1,436. The bids were taken under advisement.

Architect W. W. Lucius, Lewis Building, has been commissioned to prepare plans for the proposed Italian Club to be erected in Portland for the Italian Federation. The structure will cost between $100,000 and $150,000, and will occupy a site 50x100 ft.

Architects Sutton & Whitney, Lewis Building, have worked out preliminary plans for a group of ten buildings, each two stories high, with a total floor space of 340,000 sq. ft., to be used as a wholesale produce market. The structure is to be built by the recently organized Portland Produce Terminal Corporation, and it is expected that work will be completed by

July 1 of next year. Seven of the buildings will be 100x200 ft., with basements, while the other three will be 50x200 ft., without basements.

Contracts recently let by the Portland School Board for the James John High School show a saving of $58,277 under the estimate of the superintendent of properties. The entire cost of the building will be $262,723. Low bid for the general work was that of George Isackson, at $189,106. Low bid for the heating was submitted by the Dauch Heating & Engineering Co., at $48,000, while plumbing low bid was that of Rushlight & Hastorf, at $16,220, $2,180 under the estimate.

The city council has granted permits to three different builders for proposed apartment houses in the city. Ira Peters will erect a 12-apartment building at Sixteenth Street and Hawthorne Avenue, at a cost of $40,000. W. A. Carpenter plans the erection of a two-story apartment house at East Eighth Street and Weidler Streets. R. J. Williams plans the erection of a one-story apartment building at East Twenty-fifth and East Morrison Streets.

Other Cities in the State.

School District No. 19, Seaside, recently voted a bond issue of $75,000 to build a new grade school.

A new plumbing establishment has been opened in Roseburg, at the corner of Oak and Main Streets by Scotts Bros.

At a special election in Pendleton, November 21st, a city bond issue of $250,000 will be voted upon, the funds to be used in construction of a community building. The Pendleton Commercial Club has approved the project.

C. Van Patton, Jr., Salem, has the general contract for erection of the proposed auto stage terminal building to be built in Salem, and he will receive bids for the sub-contracts in the near future. The structure will cost $20,000, will be of brick construction, three stories high, 40x120 ft. The second floor will be divided into 21 hotel rooms, each equipped with private bath. The top floor will be used as a lodge room.

Washington

Seattle and Vicinity.

Building conditions in Seattle are holding their own, and that is about all that can be said for the local situation. No new structures involving large expenditures are outlined for the remainder of the year, although a number of prospective jobs are on the boards in the architects' offices, which are expected to develop early in 1922. Prominent among these are the various building projects planned by the Seattle School Board. The largest of these buildings will be the East Side High School, for which the school board has instructed School Architect F. A. Naramore to prepare working drawings for the first unit. The structure will be built at Twenty-fourth Avenue and Jefferson Street, at a cost o $650,000. The building will be three stories high, 200x280 ft., of reinforced concrete, steel and brick construction, and with the present frame temporary building on the site, will house 1,200 students. The board plans at some future time to erect a second unit similar in size and equipment. Working drawings for the structure will be ready about January 1st.

The board has also instructed Architect Naramore to prepare plans for the proposed Ravenna grade school, to be erected on East Sixty-eighth Avenue and Ravenna Boulevard, these drawings to be ready for figures also on January 1st. The structure will be two stories and basement, of concrete, brick and frame construction, costing about $145,000, and containing twelve class rooms.

The board will call for bids in the near future on the proposed first unit of the John Hay grade school, to be located on Boston Street and Fourth Avenue, North. The structure

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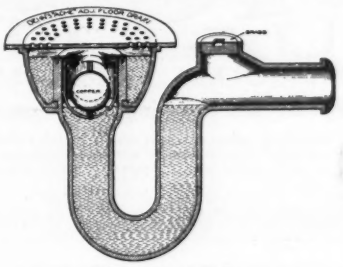

Fig. 7—Patented

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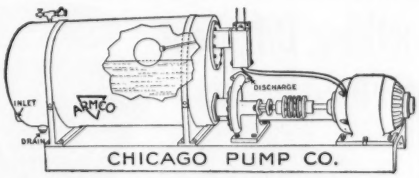

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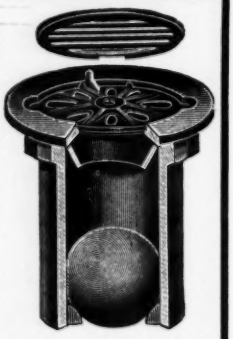
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will contain nine class rooms and will cost $112,000. Early in November the board also plans to call for bids for the Columbia grade school, a structure similar in size and construction to the Ravenna grade school.

The Seattle School Board recently opened bids on the subcontracts in connection with the construction of the North Queen Anne School, as follows: Heating: University Plumbing & Heating Co., 3939 Fourteenth Avenue, N. E., $10,685; P. J. Lavan, 1319 Eighth Avenue, $11,200; Hellenthal Plumbing & Heating Co., 90 University Way, $10,840; Wenzler & Ward, 2705 First Avenue, $10,997. Plumbing: Wenzler & Ward, $4,887; P. J. Lavan, $4,950; Dupar-Blythe Co., 712 Pike Street, $5,230. The bids were taken under advisement.

The Bethseda Corporation, owning the Minor Hospital, has purchased a building and site adjoining the hospital, and the building will be completely remodeled and modernized to be used as a nurses' home for the hospital.

Architect J. R. Nevins, Hoge Building, will open bids shortly from a selected list of contractors, for the erection of a one-story building on University Way and East Forty-third Street, for H. H. Dingley. The structure will contain six stories, will be of brick construction, and will cost $12,000. Bids for the sub-contracts will be received later from a selected list of plumbing and heating and other sub-contractors.

One of the largest building projects planned in Seattle is the proposed six-story fireproof building to be erected by the Metropolitan Building Co. at Fifth Avenue and Union Street. The structure will be the first unit of a building that will occupy the entire half-block. Plans for the structure are under preparation by Architect A. H. Albertson and provide for a building 175x136 ft. in size, of steel and concrete construction, to cost approximately $500,000. Drawings will be ready for figures about January 1st, and it is expected that construction will be under way before March 1st.

The thirty Masonic bodies in Seattle have unanimously voted to support the plan of the Greater Masonic Temple Association to construct in Seattle a Masonic Temple that will cost $1,000,000, which will replace the present large Masonic Lodge building. The local order has a membership of 20,000 in its various branches.

Richard T. Crane, Jr., president of Crane Company of Chicago, who has been in Seattle recently on a business trip, said that passage by Congress of the pending revenue bill, will perpetuate an unjust and burdensome system of taxation and seriously retard the return of national prosperity. Discussing business conditions Mr. Crane said it was a certainty that the "corner had been turned," but warned that the upward progress might be slow. "There cannot be a straight line advance," he remarked, "and the over-optimistic should consider that there may be and probably will be back fires." This is Mr. Crane's first visit to Seattle in twenty years and he expressed surprise at the tremendous growth the city has had. In his party were a number of officers of the Crane Company. The visitors were shown about the city by Lewis B. Peeples, local manager of the Crane Company.

Other Cities in the State.

According to a report prepared by the Tacoma Real Estate Association more than 200 homes are now being built in Tacoma, and the revival in home building construction is very encouraging. An interesting feature of the situation is the number of higher priced homes, ranging from $6,000 to $12,000 each, that are under construction. Second-mortgage money is scarce for residence property, and buyers are making larger first payments on their homes than heretofore.

Contract for the new school at Chehalis has been let to Patrick Manning of that city, at $47,364. The contract for the heating went to Ethan Manning, of Chehalis, on his bid of $10,270, while Fred Swinth, also of that city, received the

plumbing contract on a bid of $3,685. The structure will contain eleven class rooms.

The Spokane Chamber of Commerce recently pledged the sum of $75,000 toward a fund of $125,000 to be used in constructing an addition to the Spokane Armory.

The Knights of Pythias of Oregon and Washington, with head offices in Vancouver, Wash., plan the erection of a home for aged members, and orphans in the vicinity of Vancouve and Portland. Approximately $100,000 is available for the purpose.

Building supervisors from Washington, D. C., will soon come to Fort Walla Walla, near Walla Walla, to start preliminary construction on the work necessary to convert the Fort into a war risk hospital. The sum of $200,000 is available for the work.

Brittan Bros., Inc., Spokane, have purchased a $50,000 store site in Spokane, on which they plan the erection of a two-story brick store building to cost $50,000. Plans for the work will be ready within ten days in the office of Architect G. A. Pherson, Spokane.

The County Commissioners, Spokane County at Spokane after opening thirteen building and six plumbing and heating bids for the new county garage, refused to award the contract, and took the matter under advisement. The lowest bid for the general contract was that of C. L. Muller, $28,709, and the low plumbing and heating bid was submitted by Arnold & Evans Co., Spokane, at $2,536.

The School Board at Joyce has commissioned Architect Harold H. Ginnold, 4603 Arcade Building, to prepare plans and specifications for a 15-room, $55,000 brick school building to be constructed this fall. Bids will be called for early in November by the architect. The structure will be one and two stories high, T shaped, approximately 228 ft. long. Bids for the sub-contracts will be received at the same time as the general contract figures.

School District No. 174, Snoqualmie, plans the erection of two school buildings, to cost $30,000 each, one to be an addition to the present high school and the other a grade school. A steam heating plant will be placed in the high school structure. Plans for the two buildings will be prepared by Stephen, Stephen & Brust, architects, New York Block.

All bids submitted for the construction of the proposed addition to the high school at Toppenish were far in excess of the $85,000 appropriation for the work, the lowest being that of John Galber, Mutual Life Building, Seattle, at $102,478. The school board went into special session with the two low bidders, and agreed to eliminate the auditorium, bringing the cost down to the bond issue, and the contract was let to John Galber. Low bid for the plumbing was submitted by Al Beck, Toppenish, at $4,185, and low bid for the heating was that of Eckart Plumbing & Heating Co., 1614 Third Avenue, Seattle, at $8,374. The bids were taken under advisement.

The Kitsay Hotel & Investment Co., Bremerton, plans the erection of a two-story reinforced concrete and frame store building, from plans prepared by Baker, Vogel, Evans & Roush, architects, Seattle. The structure will cost about $20,000, inclusive of plumbing and heating.

A new Jewish Temple will be erected in Tacoma by the Temple Beth Israel, Theophil Feist, president. The structure will cost between $25,000 and $30,000, will be two stories high, of concrete.

Porter Bros., Spokane, were recently awarded the general contract for the new Sacred Heart training school and home for nurses, on a bid of $167,778. The contract for the plumbing and heating was awarded to P. J. Dowling, Spokane.

Plans for the first community dwelling in Tacoma were announced recently by the firm of Peterson, Riehl & Russell, Tacoma, to be erected at North Sixth Street and Grant Avenue. The building will be a combination of 12 separate and

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CHICAGO POTTERY CO.
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Closet Bowls and Tanks
of "Whitest Vitrified China"
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The November
Price Guide Is Ready
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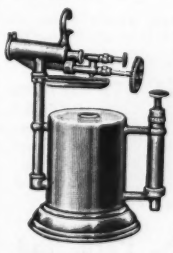
TEN DAYS' FREE TRIAL
Past performance has given us great confidence in the MARTIN Portable Vise Stand and Pipe Bender. We want you to try it out for ten days at our expense. If it doesn't live up to all our claims, you may return it and we will pay charges both ways.

After using this machine for ten days, in the shop or out on the job, we doubt if you would give it up for twice its cost. Will you make the experiment? Order from your jobber.

Illustrated in Laib's Pocket Guide

H. P. Martin & Sons
626 E. 2nd St., Owensboro, Ky.

The Blow Torch of Today



Turner new line Blow Torches will operate perfectly on the present low grade fuel—THE BAFFLE—in the burner tube generates either gasoline or kerosene without changing of parts.

The only Torch made with the Shut-off Needle valve separate.

This positively eliminates the enlarged orifice, so frequently caused on other makes.

Thoroughly tested and guaranteed.

The Turner Brass Works
SYCAMORE ILLINOIS
Fifty Years of Manufacturing Experience

Price $15.20
Ask for Discount

Down to a Price
Yet Built Like a Boiler

When you are backed to the wall in price competition our **Junior Water Heater** will meet specifications and cut your cost.

Supplied through Jobbers.

CONTINENTAL BRASS AND FOUNDRIES CO.
ST. LOUIS, MO. BELLEVILLE, ILL.
Western Distributors of RICHARDSON VAPOR VACUUM HEATING SYSTEM

HAYDENVILLE
Self-Closing
BIBBS and COCKS

Have stood the test of time.

You are making a serious mistake if you do not use them.

THE HAYDENVILLE COMPANY
Haydenville, Mass.

Hanna Ball Joint Pipe Hanger

Guaranteed Strongest Made

The "Ball Joint" Pipe Hanger swings in any direction. Pipe can be adjusted higher or lower without removing hanger.

Made of malleable iron.

Write for "Our Silent Salesman"

The Penn Engineering Co.
No. 1 312 Cherry Street, Philadelphia, Pa.

PERU Solder Nipples

Made of best grade brass to conform with the standard of high quality that characterizes every PERU product.

Use PERU NIPPLES. We are sure you will be satisfied

PERU BRASS & MFG. CO., Peru, Ind.
Eastern Representative:
MELVIN A. ROSENBERG, 108-110 W. 34th St., New York City

distinct residences, all under the same roof, and arranged in a U-shape. Building will be of frame, two stories high, and will cost about $38,000. Plans for the structure have been prepared by A. D. Gendron, architect and engineer.

The T. H. Bellingham Plumbing Co has moved from the old location at 920 Commerce street, Tacoma, Wash. The company has opened offices and show rooms in a suite on the second floor of the Providence Building, while the workshop is located at 2141 Commerce street. The plan of separating show room and shop is not new in the East, but this is the first trial of the plan in Tacoma.

Montana

Contracts for the new school building at White Sulphur Springs have been let to local men. James Wallace was given the general contract, while Theodore Winters on a very narrow margin, secured the plumbing contract.

The Helena Commercial Club has urged upon officials at Washington the need for improvement of facilities at the United States Public Health Service Hospital. The particular need of a central heating plant is pointed out.

The State University of Montana is undertaking an imposing building program, a portion of which has already been completed. The work involves the expenditure of approximately $1,000,000 at the State University at Missoula, including the erection of a $150,000 heating plant; approximately $875,000 at the State College at Bozeman, and $200,000 at the State school of Mines at Butte. Bids for the excavation and construction of the foundations of all these buildings have been let with the exception of the $225,000 gymnasium at Missoula, bids for which are now being received.

Canada

THE PROVINCE OF QUEBEC.

Montreal and Vicinity.

Conroy Bros., 866 St. Catherine Street, West, Montreal, are installing plumbing and heating systems in the Royal Bank Building, for the Grand Central Park, Ltd., and in several residences in that city.

D. A. Bethune, Ltd., 438 Bluery Street, Montreal, is completing the installation of heating in the Standard Paper Box Co.'s factory on Van Horne and Park Avenues, and is remodeling heating systems in five public schools.

A new hospital building to cost approximately a half million dollars will soon be erected by the Notre Dame Hospital at the corner of Sherbrooke and Panet Streets, Montreal. A $20,000 dental clinic room will also be added to the Montreal General Hospital on Lagauchetiere Street.

THE PROVINCE OF BRITISH COLUMBIA.

Work is to be started in the near future on a new school and additions to existing schools in Point Grey that will involve an expenditure of approximately $125,000. An addition of eight rooms and auditorium will be built to the Prince of Wales School at a cost between $90,000 and $100,000, a four-room addition to the Magee School, to cost $25,000, will also be built. The sub-contracts will be awarded by tender.

Plans for the erection in Vancouver of a large natatorium are being rapidly formulated through the incorporation of the Vancouver Natatorium for $250,000. W. R. C. Howatson and D. R.

Dickie head the project, and plans for a structure, 50x150 ft. have been prepared. A site has been secured and preliminary work undertaken.

Contracts for plumbing in the new home for nurses at Tranquille Sanitarium near Kamloops has been awarded to Orr Bros. of Vancouver, B. C. The structure will cost about $35,000.

LOST—4,000 YEARS IN 1920.

Labor in the building industry must abandon the "Anything to Win" policy. The only thing that will win or can win in the long run in the building industry or any other industry is efficiency and reliability. Whether it be open shop or closed shop, union labor, or non-union labor, makes no difference. Labor can save hundreds of millions of hours of wasted time, and hundreds of millions of dollars to itself and the nation as a whole, by seriously setting about to assist in getting rid of the enormously expensive waste that Mr. Hoover's committee of engineers, after an entended survey of the whole country, has found to exist. Their report declares that:

Management and labor must come together and fix a minimum wage to correspond with a standard amount of production, with additional compensation for additional output; that

Labor unions must eliminate the flat rate of pay for all mechanics of a single trade and modify the restrictions that forbid mechanics to accept piece work; that

Labor must reduce to a minimum the number of strikes and boost to a fair maximum the amount of production by the average workman.

Strikes are numerous, and enormously costly and wasteful. In the building trades the number of strikes and lockouts went up from 275 in 1914 to 452 in 1919, a three-fifths increase that is attributed to the great demand for labor under war conditions and the opportunity thus afforded labor to "put over" exacting and arbitrary requirements.

But in that total of 452 for 1919 the lockout is relatively unimportant as a waste producer. The number of lockouts was only 18. Labor was responsible for 96 per cent of the cases of trouble. In 1920, according to the best figures now available, the waste of time due to strikes in the entire United States was 3,000,000 working days—4,000 working years!

Philadelphia seemingly has been one of the most fortunate of cities in escaping labor troubles in the building industry. Here is the record—can any other American city surpass it?

For five years the riggers have averaged one strike a year, making a total loss for the entire time of 22 weeks. The cement finishers have lost 12 weeks in five years; the sheet metal workers 11 weeks; the plumbers and steamfitters nine weeks; plain laborers six weeks; painters and paperhangers but four weeks; carpenters only two weeks. The electrical workers have lost only an average of two days a year for the five years. Moreover, the asbestos workers have had but one strike in 10 years, the stone masons, the tile setters, and the engineers and firemen have lost no time at all through strikes in 10 years, the slate and tile roofers have a record almost as good, and the plasterers and their helpers have lost no time by strikes in 15 years.

What has been done in Philadelphia can be done elsewhere, in the judgment of the engineers who investigated building conditions. That the situation in Philadelphia is so encouraging is largely due to the efforts of the workers themselves, a fact that is likely to surprise many. Moreover, in the judgment of these investigators, "the most encouraging sign in the elimination of the causes of strikes is found in what is known as 'the Philadelphia plan,' which was put forth by the labor element of that city." The plan involves various details, but may be compacted into a paragraph thus, says "Boston News":

SOMETHING ENTIRELY NEW IN

SILL-COCKS

Semi-Finished, Polished aluminum wheel Style N. Style O—Heavy rough pattern built for service.

STYLE N Both shown in catalog D STYLE O

KINSEY & MAHLER CO. Peoria, Ill.

"Reading" Specialties

Hot Water - Steam Vapor and Vacuum Heating Embody Advanced Ideas

The Reading Heater & Supply Co., Inc. Reading, Pa.

Free for the Asking

This Catalog contains interesting details on

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Gives you the information you want regarding the "Reading" Tank-In-Basement System, modern installation methods, fuel saving, uniform heat, etc.

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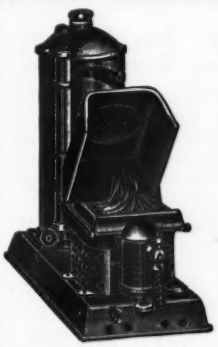

No. 25 DOUBLE BLAST

Results Are What Count

Mechanics who use DOUBLE BLAST Gasoline Fire Pots know that the maximum amount of heat can be obtained from the minimum amount of fuel, by using a DOUBLE BLAST.

The letters of the words, "DOUBLE BLAST," aptly represent many important and superior points in the construction and operation of the DOUBLE BLAST. Read them over.

Double Burners	Best
Odorless	Labor Savers
Unrivaled	Aluminum Bronzed
Blue Flame	Safety
Lasting	Time Savers
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Leading jobbers handle them. If your jobber does not handle them, send us your order and we will ship direct. Additional information and circulars will be furnished upon application.

Double Blast Mfg. Co.

20th and State Sts. NORTH CHICAGO, ILL.

Enjoy your Chicago visit at the

MORRISON HOTEL

THE HOTEL OF PERFECT SERVICE

and the

TERRACE GARDEN

CHICAGO'S WONDER RESTAURANT

Barrett Sewer Tide and Back Water Trap

Designed Right, Made Right, Works Right

There is no possibility of sewer gas or back water passing through the Barrett Trap.

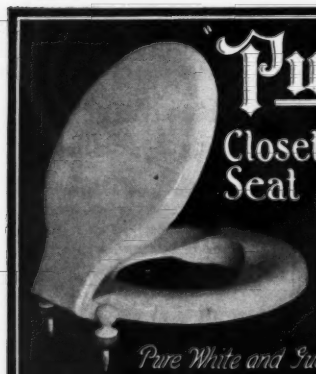
It operates on a sure, safe principle and is guaranteed to work as represented.

Let us explain to you why the Barrett trap is the best on the market

James Barrett Mfg. Co.

115 to 121 Pearl St., Boston, Mass.

"Puritas" Closet Seat



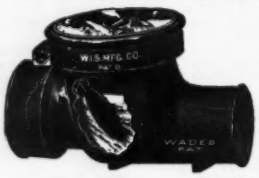
Write for new booklet showing different styles of the "Puritas" Seat

Standard Tank & Seat Co., Inc.

Camden, N. J.

Pure White and Guaranteed to Remain So!

WADE **Straight-Way Clean Out House Drain and Back Water Gate Valve**



B—Fig. 1

Positively water and gas tight.

Connects to main supply and keeps face of gate clean and free from cloggage.

Makes a perfect clean-cut without back water gate valve.

Every plumber should know about this sanitary fitting.

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Wade Iron Sanitary Mfg. Co.

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The DETROIT Torch

A Marvel for Service and Durability

Highest quality brass tank, heavily reinforced, powerful improved burner, strong, efficient pump, hook and support for holding soldering coppers.

This torch eliminates the troubles that attend the use of the old-style torch.

Get a "DETROIT" from your jobber. You will be more than pleased with it.

Detroit Torch & Mfg. Co., Detroit, Mich.

An organization of employers is subdivided into committees which meet with and function with like committees from the labor unions, whether in the building trades organization or not. These sub-committees consider together such important matters as the education of apprentices, working conditions in the industry, the handling of materials, and related subjects. At the peak there is a heading-up committee which constitutes the Tribunal or Council of the building production for Philadelphia territory, and this tribunal is intended to become the strategic board for consideration and possible solution of all problems affecting the building industry as a whole, having power to delegate authority, formulate rules, and assign duties.

FIGHT—DON'T RUN!

You think you know more about yourself than anyone else could possibly know, and no doubt you do. Nevertheless, when you can't get out of bed in the morning you call a doctor, don't you? Sure you do—and you're exactly right when you do it.

Now I'm no doctor, but my father was, and he always told me that 90 per cent of a doctor's success is in the proper diagnosis of the case, writes L. R. Putman, of the American Wholesale Lumber Association. I have had some twenty odd years' experience in exchanging lumber and other building materials for real spending money and I take it that "a little order now and then is relished by the best of men."

This is one time when the order-taker and the "hard times" talker have no place in the business plan. I've been harping for months on going after business and I believe in it more every day I live. We have reached a place in the business world when we must create the business.

The farmer must prepare the ground, sow the crop and then fight the weeds if he reaps a harvest. Even then he may harvest a loss but he can't quit. He may rotate his crops, but he must plant something or starve. So it is with us.

There are more homes needed in this country than automobiles. A home is an asset while an automobile is a liability, yet more automobiles than homes are being sold. Some automobile dealer is constantly after you to buy a car, but it's a rare thing that anybody asks you to buy a home.

Business *can* be created if we all do our share. Some fellow said "It's not the 'hard times' coming so much as the 'easy times' passing."

What do you say fellows? Let's step back and get a better view of our problem—then tackle the job with more energy and intelligence than we ever used before.

Would Abolish Railway Labor Board.

Iron and steel makers in the Pittsburgh and Youngstown districts are interested in the attitude of John G. Cooper, of the Nineteenth Ohio district, who states that he will institute efforts in the forthcoming session of Congress to abolish the Railway Labor Board through amendment of the Esch-Cummins law. Mr. Cooper has been in consultation with a number of independent steel makers in the Mahoning Valley on the subject. "The Railway Labor Board is not answering the purposes for which it was created and I am convinced that its abolishment will help to bring the railroad managements and their operating forces closer together," he states. "The time has come when the Government should, as far as possible, keep hands off all legitimate business. Many, looking into the future, realize that too much paternalism in Government is a real menace."

Plans for a new $300,000 group of buildings to be erected for the Blessed Sacrament school and church of Los Angeles, on the block bounded by Sunset boulevard, Selma, Castle Avenue and Las Palmas Avenue, are being prepared.

THE RIGHT KIND OF AIR.

Plenty of air, with plenty of moisture in it, is the cornerstone of health, thinks Dr. Adam H. Wright, of Toronto, chairman of the Ontario Provincial Board of Health. These are matters, especially the item of humidity, on which all medical men do not agree; but Dr. Wright certainly has a good proportion on his side, although he is fair and quotes high British authority on the other. He cites a common question—"Is night air bad?" and quotes the reply of one physician to the effect that he did not see how one was to get away from it. The inquirer, of course, he goes on to explain, meant outside air as compared with house air. Dr. Wright admits that outside air at night is not in some ways as good as that of the day, especially during sunlight, but it is certainly the best available. He continues:

"In considering ventilation arithmetical computations are not altogether satisfactory, as mathematical correctness is generally impossible; but we may start with one estimate frequently made by hygienic authorities. Each adult is supposed to require an 'hourly supply of 3,000 cubic feet of air for the removal of his own *effete* matters.'

"If there is not a constant inflow of fresh air and outflow of used air, some vitiation occurs in a very short time. To get enough of a continuous current is difficult in very cold weather in our climate. We must consider that ventilation goes hand in hand with heating, and the question of expense, especially with present prices of fuel, becomes a very serious one.

"We expect much from diffusion and gravity, but they are not suffiicent in inhabited rooms. Under ordinary circumstances there are inlets and outlets in every room through flues, cracks, around windows and doors—even through bricks, plaster, and mortar; so there is always some ventilation even when we try to prevent it by double windows, papering the walls, and closing up cracks.

"The simplest and most common method, and perhaps the most effective, is to open a window. This brings up the important question of the draft, which is considered so dangerous. We are told in that admirable text-book on 'Practcial Hygiene,' by Harrington and Richardson, that drafts which are productive of discomforts are more dangerous than the ordinary vitiation of the air. As I sleep in a draft with comfort and benefit during the greater part of the year—always when the temperature is not at or below zero—I have not that dread of a healthy draft which so commonly prevails. That precious draft of 'God's pure air' is much maligned.

"However, it must be admitted that drafts are not always harmless. You can not expose yourself inside or outside in cold weather with comfort and safety, clad in pajamas or a bathing costume. If not properly protected by bed clothing or suitable wearing apparel you will get unduly chilled and suffer evil consequences therefrom.

"To come back to our bedroom, one may properly ask, how much air should be introduced during our sleeping hours, or how large should the opening be? No fixed or definite directions can be given, but the following figures may furnish a rough guide. In the colder months raise or lower (or both, as I generally prefer) the window from one to twelve inches, or less than one inch in zero weather.

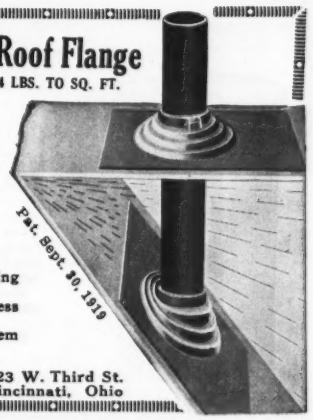
"The chief requirement in the ventilation of a room at night is a regular income of air with a constant current, called by architects, 'thorough ventilation.' Keep drafts away from the bed so far as possible. If this is impossible, let the drafts come and go as they like, and sleep where you like. If you fear drafts it is a very simple matter to deflect the current by some of the many devices which are well known and used."

Dr. Wright advises that the temperature of the bedroom during sleeping hours should be about 50 degrees in cold weather.

Retlaw Telescopic Roof Flange

A ONE-PIECE LEAD FLANGE, 4 LBS. TO SQ. FT.

Drawn into circular corrugations.
Extremely pliable—no seam.
Allows for settling of roof or pipe.
Adjustable to any angle.
Allows for contraction and expansion.
Collapse one side—draw out other.
Draw up band, compressing lead around pipe.
On like a flash—costs less than hand made.
Ask your jobber about them or write us for particulars.



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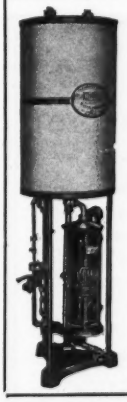
No. 250

"BRE HYGIENIC" SPRING SEAT

Just the seat for that office building or factory job. It has an adjustable spring tension. A spring shock absorber that takes all jar and strain from the bowl. A stop that keeps the seat from striking fixtures in back and a "BRE HYGIENIC" seat.

Get our special prices for your show room or window display.

BRE MFG. CO.
Hyde Park Dist., Boston, Mass.



Automatic Storage Water Heater

KOMPAK

THE KOMPAK CO.
New Brunswick
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C. B. BABCOCK CO.
San Francisco, Cal.
J. V. Landreth
New York, N. Y.

PORCELA

The Bath Tub Cleaner

Contains no grit.
No acid.
Keeps fixtures like new.

Most contracting plumbers use Porcela and recommend it to their customers.

If you haven't Porcela in stock order from your jobber. Write us for free sample can and descriptive folder.

PORCELA-RADAX CO.
NEW BRIGHTON, PA.

Wherever You Install a Kitchen Sink You Have a Customer for the

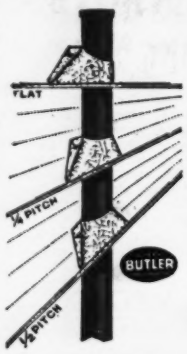
Boston Grease Trap

It is easy to install, makes a good looking job and gives satisfactory service. Has extra large handhole, making it a simple matter to clean out.

Made in both round and square patterns.

Write for Catalogue showing our line of Grease Traps and other Specialties

R. ESTABROOK'S SONS, 1st and C Sts., South Boston, Mass.



THE OVERTON

Adjustable Roof Flashing is in a class all its own.

A special feature is the "V" which forms a metal spring. This assures a perfectly air-tight joint.

Hugs any pipe—water tight—fits any angle. Adjusts itself without turning or twisting.

Galvanized iron or copper.

Write for descriptive literature

Manufactured by

Butler Manufacturing Co.
Minneapolis, Minn.

A LEAD Product *for* Every LEAD Purpose

Lead Pipe—Lead Wool
Lead Tubing—Lead Roof Flanges
Lead Spun Acid Bottles—Refined Caulking Lead
Plumbers Lead Fittings—Bar Ribbon Ingot Lead
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White and Red Lead—Block Tin Pipe
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THE EAGLE-PICHER LEAD CO.
JOPLIN CINCINNATI CHICAGO

Tank Fittings of Quality

1856 **"McSHANE"** 1921

The ORIGINAL Compound Lever Ball Cock
Elevated, Low-Down, Top and Bottom Supply
Tank Levers and Valves

McSHANE BELL FOUNDRY CO.
BALTIMORE, MARYLAND

If at bedtime the average temperature of the house is about 70 degrees, it is not prudent, he says, to retire with the air at that temperature when cooling takes place during the night, and get up in the morning in a shiver-producing atmosphere of 45 to 50 degrees. It is well to open the window an hour or two before going to bed, closing the door at the same time to avoid cooling the living room before retiring. He proceeds:

"If when getting into bed, you have sufficient covering to keep the body and extremities warm, you will be in a good, hygienic condition, and you can breathe the comparatively cool air quite as safely as you can respire even cooler air outside when you are walking or motoring along the streets.

"There is one important matter so intimately connected with ventilation that it should not be overlooked—the necessity of providing moisture in the air of our dwellings during cold weather.

"Sir Hermann Weber, one of England's most distinguished physicians, insisted on keeping the air in the house pure and dry. Our opinion on this continent is that we should keep it pure and moist during the cold season. The relative humidity should be about 50 per cent. If less than that, say 35 to 40, the dry air has a great absorbing power and it will take up moisture from persons and things—from the skin, the mucous membranes, especially of the respiratory tract, from the lips and nostrils down to the bronchial tubes, from wood furniture, from leather binding of books, causing them to crack and fall to pieces. It causes undue dryness of the skin, irritation of the throat with a cough sometimes bronchial, sometimes a laryngeal cough of a peculiar character, ending in a 'squeal.' The so-called 'winter cough' is very common in Canada and the United States. Some of us found it very obstinate in the past, but we now think that the proper remedy in at least a large proportion of cases is the provision of moisture in the air we breathe.

"The most common methods of inducing this moisture are by heating water in water holders attached to our furnaces, humidifying pans fastened to our radiators, and various forms of humidifiers planned by architects and sanitary engineers. About two to four (or perhaps more) gallons should be evaporated per day in a fairly large house."

Late News from Kansas City, Mo.

Along with the increase in the building of residences in Kansas City, and the number of building permits issued, there has come a proportionate increase in activity in the plumbjng industry. In September, the number of permits issued was 600, and the fees paid to the department at the city hall amount to over $1,800. Compared with the business of last year, the permits issued since the 17th of April, the beginning of the fiscal year, have been considerably more numerous than in 1920, during the same time. The fees have surpassed those of last year about $1,000, amounting already to over $7,500.

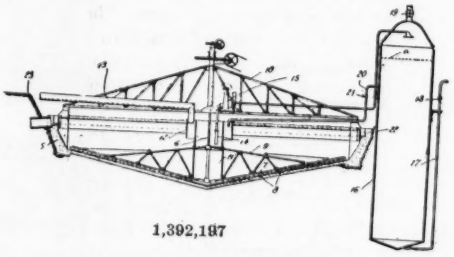
Because of this increase in the business in Kansas City, and because there are 65 journeymen plumbers of the city regularly employed on the Corn Products building, being erected in North Kansas City, there is some shortage of journeymen plumbers in Kansas City.

The supply of plumbers for the future is receiving serious consideration in Kansas City. There are practically no young men applying for the jobs of apprentices with the plumbers. There is a five-year period of apprenticeship in the regular training of an apprentice who goes out with the plumber, and works his way up. Then the first year's pay is not attractive, being about $12 a week. "There are not very many young fellows that are willing to do the work of the plumber's appresentice for that money, when they can get a white collar job at more money," is the way one of the old-timers puts it.

Patents

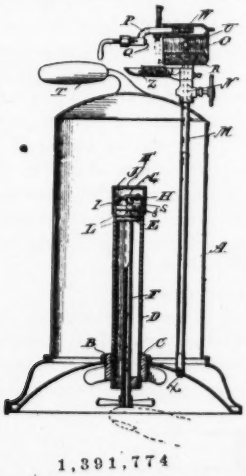
Plumbing Department.

1,392,197. Sewage Treatment. Howard Wall Morgan, North Tarrytown, N. Y., assignor to The Dorr Co., a corporation of Delaware. The method of treating sewage which comprises, subjecting the sewage to sedimentation and decantation in an appropriate basin having a sludge discharge outlet in communication with the bottom thereof, mechanically working material settling on the bottom of said basin toward said outlet, withdrawing settled material through said outlet in the form of sludge, and supplying such withdrawn sludge to a relatively deep body of similarly obtained sludge undergoing biological digestion.

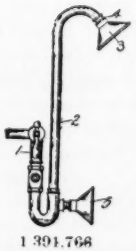


1,392,197

1,391,774. Blowtorch. Frederick E. Gerstenberger, South Euclid, Ohio. In a blow pipe, an annular chamber, a supply pipe for fuel oil under pressure, leading into the lower part of said chamber, a supply pipe for fuel gas leading from the upper part of said chamber, a burner nozzle in said fuel gas supply pipe arranged to discharge axially into said chamber, and supplying heat thereto for superheating, expanding and vaporizing said fuel oil therein, a baffle plate in the central opening in said annular chamber and adjustable longitudinally thereof.



1,391,774

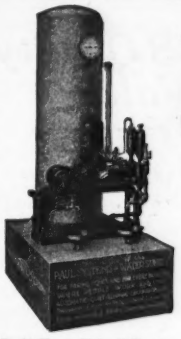


1,391,766

15,202

1,391,766. Bath Spray. Jerome J. Donovan, Oakland, Cal. A union formed in two sections, a spiral guide mounted in one of said sections, the other section having ports, and a valve wheel mounted in said other section to rotate past said ports under the influence of the water delivered from said guide.

15,202. Soldering Iron. Raymond C. Parent, Chicago, Ill. A self-heating implement for the purposes set forth comprising a reservoir handle, a yoke connected thereto and having open-



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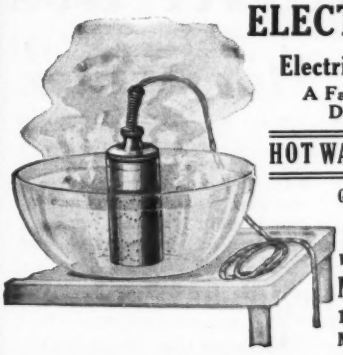

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It does away with pipe and fittings for four faucets—only two valves needed. Eliminates horizontal pipe carriers at back of tray. By a slight movement of spout, water is supplied to either tray. Hot water can be drawn without filling room with steam, by turning on cold valve slightly.
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Makes a better looking and more sanitary job.
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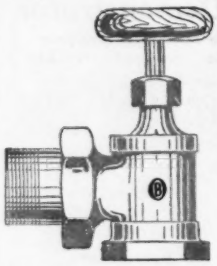

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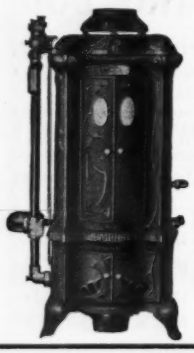

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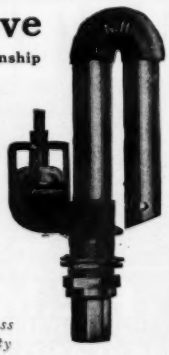

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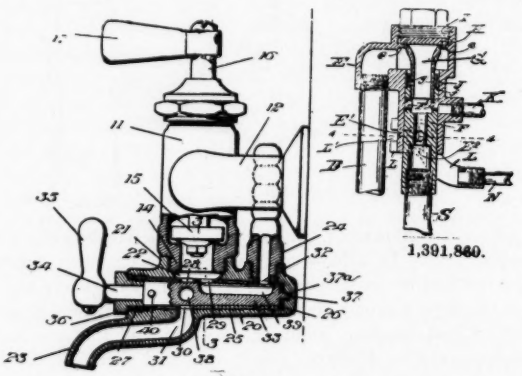
ings in its sides, a burner including a needle valve secured within the yoke and accessible through openings therein for adjusting the needle valve, feed pipes extending from the reservoir handle to the burner, a fiber packing in the lower end of the reservoir into which the feed pipe extends, and a leather disk on top of the packing through which the liquid fuel permeates to said packing.

1,392,167. Duplex Faucet. Jacob T. Johnson, Atlanta, Ga. A duplex faucet comprising a horizontal body to be disposed below another faucet and having an upper inlet portion between its ends attachable to such other faucet, the body having a delivery spout leading downwardly from between its ends and a nipple extending upwardly from the body at a point spaced longitudinally from said inlet portion and spout to be disposed behind said other faucet, and a longitudinal valve in said body having an operating handle beyond the forward end of the body and having a passage to establish communication between said inlet portion and spout and a longitudinal channel to establish communication between said inlet portion and nipple, said passage and channel being arranged for the alternate flow from the inlet portion into said spout and nipple.



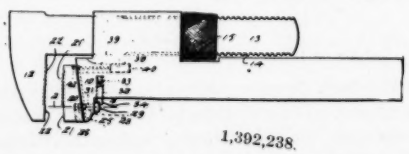
1,391,860.

1,392,167.

1,391,860. Water Inlet Valve for Flushing Tanks. William Sherwood, Detroit, Mich. In a device of the character described; a flushing tank; a valve body in said tank; a reciprocating sleeve in said body; an annular valve having a flaring end carried by said reciprocating sleeve; a disk valve seat supported on an annular flange formed integral with the valve body; a screw threaded plug screwed into said body to secure said disk valve seat in position; a cup washer supported between the annual valve and the reciprocating sleeve; a float lever fulcrumed upon trunnions integral with the valve body, and a pair of opposing set screws carried by the reciprocating sleeve for connecting the float lever with the reciprocating sleeve adjacent to the fulcrum of the float lever.

Heating Department.

1,392,238. Wrench. Charles C. Stewart, Stoddard, Ariz. In a device of the class described, a stationary jaw, a movable jaw, a working block slidable along the face of the stationary jaw, and having tongue and groove connection therewith, said

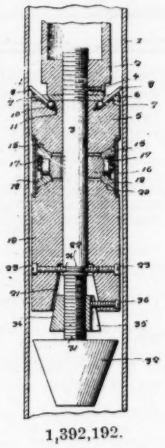


1,392,238.

block having an opening therein and a slot communicating with the opening, a stop pin passing through the stationary jaw and entering said opening, said pin having a reduced end portion, the reduced portion co-operating with the opening and slot

1,392,192. Pipe Cutter. George W. Miller, Mansfield, Mo.

In a cutting device for well casings, a body carrying laterally disposed cutters, and a head, means carried by the latter for engaging with the casing to hold the head against turning.



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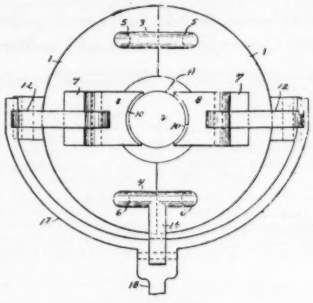
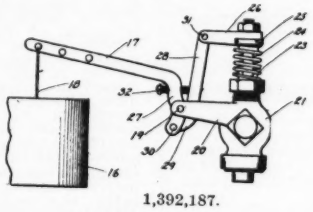


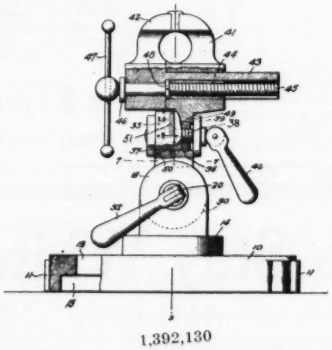
1,391,804.



1,392,187.

1,391,804. Pipe Gripping Device. Buford J. Steen, Goose Creek, Tex. A device of the character described, including a block formed of two sections and having a central opening to receive a pipe, a vertical slot in each section, oppositely disposed dogs pivoted in said slots and having serrated faces, and a manually operated means for forcing said dogs into engagement with said pipe.

1,392,187. Oil Burner. George H. Mahan, Kansas City, Mo. A valve casing having a valve stem projecting there-through, a lateral arm on said casing, a lever having a curved extension at one end and a weight at the other, means for pivoting the curved extension intermediate its ends to the arm, an arm on the valve stem, a link, one end of which is pivoted to the second mentioned arm and the other end of which is pivoted to the curved extension of the lever at one side of the pivotal connection between the lever and the first named arm, and means normally urging the valve to open position.



1,392,130

1,392,130. Vise. Otto L. Engstrom and Herman C. Nelson, South Bend, Ind. In an apparatus of the class described, a foundation member having a longitudinal guide slot, a base member rotative on the foundation member, means for clamping the base member in adjusted position on the foundation member, perforated lugs rising from the base member, a cylindrical member disposed for rotation between the spaced lugs, means, for clamping the cylindrical member between the lugs, a cheek member rising from the cylindrical member, and a vise device including a stationary jaw and a movable jaw.

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Saves Fuel Labor
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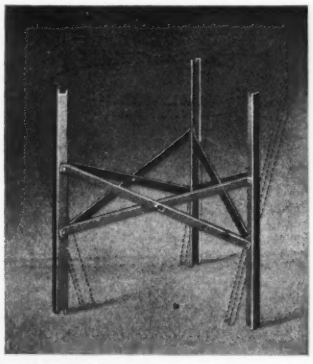

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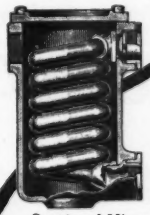

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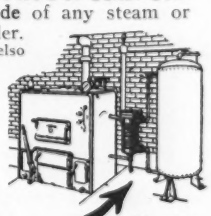

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Government Proposals

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., Oct. 20, 1921.—Sealed proposals will be opened in this office at 3 p. m., Nov. 15, 1921, for furnishing Plumbing Fixtures, radiators, etc., for the U. S. P. H. S. Hospital, Fort Mackenzie, Sheridan, Wyoming, in accordance with specifications, copies of which may be obtained at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 10-29

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., October 19, 1921.—Sealed proposals will be opened in this office at 3 p. m., Nov. 15, 1921, for furnishing Kitchen Equipment for the United States Public Health Service Hospital, Fort Mackenzie, Sheridan, Wyoming. Specifications may be obtained at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 10-29

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., October 21, 1921.—Sealed proposals will be opened in the office of the Superintendent of Construction, U. S. Public Health Service Hospital, Whipple Barracks, Prescott, Arizona, at 1 p. m. November 16, 1921, and in the office of the Supervising Architect, Treasury Department, Washington, D. C., at 3 p. m., November 16, 1921, for the installation complete of the Mechanical Equipment for two Semi-Ambulant Quarters, four double quarters for Officers, one double quarters for first class Personnel, one quarters for married Attendants, also kitchen equipment and refrigerating apparatus for Ambulant Patients Mess, etc., refrigerating apparatus for General Mess laundry equipment, new Boilers outside service, etc., at the United States Public Health Service Hospital No. 50, at Whipple Barracks, Prescott, Arizona, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent of Construction at Whipple Barracks, Prescott, Arizona, in the discretion of the Supervising Architect and Bidders may forward their bids to either place. Jas. A. Wetmore, Acting Supervising Architect. 10-29

Books for Your Trade Library

SANITATION IN THE MODERN HOME. By John K. Allen. Explains the proper arrangement and equipment of bath room, laundry, kitchen, etc. A suitable book to present to your customer or prospective one. Size 5½x8 in. 272 pages. Cloth Price, $2.00.

PRACTICAL METHODS OF SEWAGE DISPOSAL. By H. N. Ogden and H. B. Cleveland. Covers in detail the problem of sewage disposal for residences, hotels and institutions where connection to city sewers is not available. Size 5¾x9¼ in. 132 pages. Cloth. Price, $1.50.

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HAYES-RUPPEL MANF'G CO. HAYES GRAND RAPIDS, MICHIGAN

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